A systematic approach to select new table grape varieties for cultivation

by

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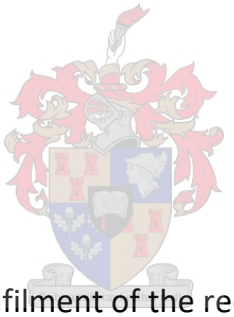

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Declaration

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Summary

Table grape producers are replacing vineyards with new table grape varieties. The change in day-to-day operations and in the financial performance of a Farm Business imposed by an alteration in the variety portfolio is uncertain. Producers consider several factors when selecting new table grape varieties. Varieties that are disease resistant, tolerant to transportation and cold storage, produce large yields and have conical shape bunches with round berries are desirable for cultivation. Producers consider these factors when selecting a new variety along with the harvest window and the profitability of the variety. The variation in input cost to improve bunch configuration and fruit quality is directly influenced by the canopy management strategy. While the price received per carton is influenced by fruit quality and market conditions.

This study investigates the attractiveness of seventeen different table grape varieties in the Berg River by evaluating five quantitative factors and the weekly pack schedule. The factors that influence the financial performance of the Farm Business are yield, price, royalty costs, infield labour hours and chemical hormone costs. The factors are determined for each variety in a simulation model to calculate the modified internal rate of return (MIRR) in an enterprise model for a re-established vineyard block over fifteen-years. The MIRR does allow to measure how attractive is a vineyard investment without considering the total investment requirement.

The purpose of the study is to identify the key factors a farm manager should consider when selecting a new table grape variety. Two farms are simulated to determine what effect the change of a table grape variety on a vineyard block will have on the MIRR profitability criteria. The MIRR is interpreted with consideration to the evaluated factors to determine what factor is the most influential towards profitability. The quantitative value of the factors was calculated with data provided from farmers, consultants, researchers and a fruit exporter. The study revealed yield is the most influential factor towards profitability, followed by price. While royalty cost should only be considered in decision-making when yield and price per carton between the alternative varieties are similar. The study concludes that labour cost is higher for the traditional varieties, while new varieties require less infield labour. The last evaluated financial factor, the cost of hormone regulators, is too low to influence profitability.

The simulation model is a helpful management aid to make vineyard investment decisions by measuring these factors against one another. The model can be used to estimate the required labour for the following seasons and provides a dynamic platform to administrate the labour hours required to complete various activities. An expanded variety portfolio can be researched in future studies by analysing the available data of the other table grape production regions.

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Preface

This thesis is presented as a compilation of 5 chapters.

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Chapter 1: Research Proposal

1.1 Background

One-third of the table grape vines in South Africa are older than 10 years (Bestbier, 2020; Ferreira, 2020). Table grape producers are replacing the old vines with new generation table grape varieties. A variety is selected based on production and consumption attributes (Wang, Zhou, Xu, Perl, Chen & Ma, 2017). Upon variety selection, producers evaluate economic and biological factors (Wang *et al.*, 2017) such as price and yield. Large berries directly influence yield and receive higher prices in the international market (Van der Merwe, 2020; Nwafor, Gribaudo, Schneider, Wehrens, Grando & Costantini, 2014; Wang *et al.*, 2017). Therefore, bunch and berry size are highly influential attributes for the selection of a variety. Other extrinsic attributes such as berry- and bunch shape and colour are also considered when varieties are selected. Dark-coloured grapes show less bruising compared to yellow varieties (Wang *et al.*, 2017), which are prone to skin disorders. In short, table grape producers desire varieties that are disease tolerant, produces large yields, have compact cylindrical conical shaped bunches with large round to oval shaped berries that have a higher sugar content, long shelf life and tolerate to transportation and storage well (Wang et al., 2017).

The influential attribute bundle can be attained with various canopy management strategies. The foundation of yield and fruit quality is based on winter pruning (Hoekstra Fruit Farm, 2017; Perold, 1926; Pongrácz, 1978). While, the shape, size, and quality of individual berries are improved with the amendment of the microclimate in spring and summer. The severity of the defoliation and fruit manipulation required is directly influenced by the variety. Several varieties such as Thompson Seedless (TMS), require attentive work throughout various phenological stages to ensure that the full fruit capacity matures. The required workload increases if fruit bunches are compact. Berries are removed to provide space for berry growth and to amend the microclimate in the bunch to prevent fruit disorders and disease susceptibility (Vail & Marois, 1991). The highly labour-intensive bunch loosening practice has been addressed with a chemical growth hormone, known as gibberellic acid (GA_3). This synthetic hormone induces berry shatter (Zabadal, 2002), i.e. causes berries to drop from the bunch, which reduces the amount of labour and time required to loosen compact bunches. GA_3 is also used to enlarge berries but at a significant quality loss. Although the negative effects induced by GA_3 vary among varieties, berries treated with excessive GA_3 have inadequate colour and are prone to burst, which decreases packable yield.

The economic influence a new variety imposes on a Farm Business in the field and in the market is uncertain. The financial uncertainty and the complexity of agricultural production systems discourage the investment in new table grape varieties that have yet to be cultivated on the farm (Louw, Geyser & Jordaan, 2017). South African farmers show neophobic behaviour and select familiar varieties such as Crimson Seedless (CSS), to re-establish vineyards (Ferreira, 2020; Meintjies, 2019). Vineyard investment decisions are risky due to unforeseen weather conditions, yield instability, variation in production costs, price volatility, unpredictable physiological processes and lastly, trade policy prerequisites (Louw et al., 2017). The feasibility and profitability of investment decisions can be evaluated with innovative production systems to mimic real-world scenarios and alternative farm strategies (Le Gal, Dugué, Faure & Novak, 2011).

1.2 Research problem

The table grape variety portfolio in South Africa is expected to change considerably in the upcoming years. The re-establishment of a new vineyard imposes financial uncertainty. A vineyard is only in full production in year four (Kalili, 2000). Therefore, the opportunity cost to uproot a vineyard to replant with another is formidable. The true value of a re-established vineyard can only be measured over a fifteen-years. The cost and income vary among each variety as table grape varieties are unique in several ways. Each variety requires a unique canopy management strategy and is harvested in different weeks in the summer. The intensity of the actions performed on a vineyard in the field is unique to the variety. Therefore, the time required to prepare the yield varies among varieties. The differentiation in harvest dates causes table grapes varieties to obtain different prices in the market. The quantitative value of each variety is unknown until the investment is made. The main research question is which factors should be considered and to what extent do they contribute to the overall establishment consideration?

1.3 Research objective

The main aim of this research project is to identify the factors that need to be considered in the decision-making process for the establishment of a new vineyard and the extent to which these factors contribute to the establishment consideration. This is done on a managerial and financial basis. To achieve this aim the following specific goals are important:

- To identify the relevant key factors that drive the establishment decision,
- To assess the managerial implications per variety and
- To evaluate the financial implications of each variety, also within the farming system.

The initial investigation focuses on certain variables for each variety, namely, price, royalty costs, yield, labour hours and chemical growth regulators. The current study aims to develop a platform to measure the change a new variety will impose on day-to-day operations and the financial farm situation.

1.4 Research design

The research study will evaluate the performance of table grape varieties in the Berg River by measuring the significance of five variables, namely yield, price, royalty costs, infield labour hours and chemical hormone costs. Variables will be quantified through a review of available literature, data, and sources within the industry. The study will require a thorough understanding of table grape cultivation methods and the performance of varieties within the international market. The costs associated with various cultivation actions need to be determined to provided evidence that there is differentiation in the canopy management strategies between varieties. Yield will be calculated with the bunch size and collated with actual harvests' in previous years. The actual price for the various varieties will be used to calculated income and royalty costs.

With the farm simulation model, a farm manager will be able to determine the required in-field-work load for each vineyard block, along with the required chemical hormone regulators. The financial implication on day-to-day operation will be calculated by determining the appropriate canopy management strategy for each variety and the time and cost to complete the tasks. The financial effect of a new variety on a Farm Business over fifteen years will be determined with a yield estimation based on the vines age and the harvest of the previous season. The financial income and royalty-bearing costs will be based on real data from the previous season.

The five variables will be calculated in the equiv. of a 4,5kg carton to measure the marginal effect of each variety on a Farm Business. Thereafter, in a farm simulation model, the internal rate of return (IRR) for different vineyard blocks will be calculated to measure the influential variables in the profitability criteria. An additional simulation of the weekly farm harvest will determine if the harvest schedule imposed by the new variety portfolio is manageable. The objective of the study is to gather sufficient information and data to compile a simulation model, which farm managers can use to evaluate the change a new variety will impose on the Farm Business. Additionally, the change in the weekly harvest imposed by the change in the varietal portfolio over the fifteen years will be measured to demonstrate the importance of a logical sequence re-establishment plan.

1.5 Research method

1.5.1 Literature study

In this research study, a more comprehensive understanding of the current table grape variety portfolio in South Africa will be attained. The change in a variety portfolio will be identified to emphasise the research goal. New varieties cause a change in the canopy management strategy to prepare the vine and fruit to increase packable yield. The research will investigate why certain actions are performed in vineyards, to provide background when simulating a table grape farm.

1.5.2 Data collection

The required canopy management strategy for each variety will be attained from published literature and booklets that are available to farmers. The labour hours and cost to complete the canopy management strategy will be based on real data provided by co-players in the table grape industry. The yield for each variety will be mathematically calculated based on the bunch weight published in literature. The calculated yield will be consolidated with real production performances of table grape producers in the Berg River. The price for each variety will be based on the previous year's exports.

1.5.3 Simulation

The information and data will be processed in a simulation model to mimic real-world scenarios. The simulation model is an ideal method to research day-to-day operations, evaluate what-if scenarios and to solve problems (Shadbolt & Martin, 2005). Csáki (1985) proposed a biological and technical approach to simulate plant cultivation systems. The proposed method will be incorporated into an enterprise simulation model for variety portfolio planning and decision-making. The simulation model can evaluate the outcome a change in a variety portfolio will have on the financial position of the Farm Business and the weekly packable yield.

1.5.4 Data analysis and interpretation

In the agricultural production system, the combined resources over time are accounted for to make an economic-conclusion (Csáki, 1985). The canopy management strategy exercised on a vineyard, the weekly packable yield, and the income per 4,5kg equiv. carton will determine the IRR on a vineyard block. The interpretation of the IRR will consider the marginal change in the five variables evaluated to determine the most influential variable that should be considered when selecting a new table grape variety.

1.6 Outline of chapters

A literature review, with emphasis on the five variables and their importance in table grape production, is the focus of chapter 2. Chapter 2 will describe how the table grape industry in South Africa has emerged from the roots of ancient history. The current production and market situation in the table grape industry will be discussed to highlight how important it is to select the correct table grape variety. The ancestor of many table grape varieties, Thompson Seedless, will be evaluated in depth to conceptualise the various concepts, disorders, and cultivation practices present in table grape production.

The system theory will be discussed in chapter 3 to demonstrate the use of a simulation program to conduct large studies. Thereafter, the information and data used in the study will be presented and how the data and information will be processed to simulate real farm scenarios so that the significance of the five variables can be measured will be demonstrated.

The value of the five variables evaluated in the study will be presented and evaluated thoroughly in chapter 4. The internal rate of return (IRR) calculated for each block in the two farm simulations will be interpreted to determine which one of the five variables is the most significant. The importance of establishing new vineyards in an economically feasible sequence will be emphasised in the results with an additional platform in the model to demonstrate the change in weekly packable yield as old vineyards are replaced with new varieties.

The study will be concluded in chapter 5, where the expected change in the Berg River table grape production portfolio will be discussed, along, with the influential variables to consider when selecting a new table grape variety.

Chapter 2: Industry review and variety perspectives

2.1 Introduction

This chapter provides fundamental information about the table grape industry and table grape cultivation practices. First, the evolution of table grape varieties is discussed. Thereafter, the current table grape industry is described to provide information on the variety portfolio and production conditions in South Africa, as well as the export markets. The second half of the chapter presents the literature findings of canopy management strategies to provide clarity on why table grape cultivation requires clinical micromanagement.

2.2 Grape culture history

Pongrácz (1978) describes how the history of grapes starts in the ancient tombs of the Middle Kingdom of Egypt, where paintings of workers harvesting grapes with curved knives are apparent, and how the grape culture moved from Egypt to Crete, Asia and Greece before 600 B.C. The Greeks were adventurous explorers who worshipped Dionysus, known in Latin as *Bacchus*, the god of wine. The Greeks colonised Sicily and Italy and introduced wine to Rome. The Romans explored further to the west and established viticulture in Spain, Southern France, Germany, Hungary, Romania and eventually Northern America (Pongrácz, 1978). After the Roman empire was overthrown, many districts in Italy were left vacant and the grape harvest withered to the ground (Gibbon, 1776). Europe was in a disorganised state in the fifth and sixth centuries, until the Roman church emerged (Pongrácz, 1978). The Christian monasteries in the eighth and ninth century restored civilization by improving cultivation, education and art. The famous vineyards in Europe belonged to the Roman church, which lead to the development of Burgundy viticulture (Johnson & Robinson, 1994; Pongrácz, 1978). Wine became a priority for the Roman church. Emperor Otto the Great ordered the monks of the monasteries of Southern Germany to re-establish the vineyards in A.D. 995 (Pongrácz, 1978). Only in 1806, were most of these vines secularised by Napoleon for economic use (Johnson & Robinson, 1994).

According to various sources, the first vine cuttings arrived either in the Cape in 1654 (Pongrácz, 1978), in 1655 (Carstens, Burger & Kriel, 1981; Meintjies, 2019) or in 1656 (Theron, 1932). According to Theron (1932), Jan van Riebeek asked in one of his first letters to the Here XVII, for young fruit trees and vines. The proposal was approved and in 1656 the first wine grape vines were imported from Rinse province in France. By 1656, 1200 vines were established on the Farm Boschheuwel (Wynberg), which yielded the first harvest in South Africa, from which brandy was made (Theron, 1932). After the harvest, the vineyards were destroyed by indigenous people, and after re-establishment of the vineyards, the harvest was destroyed by birds in 1662 (Theron, 1932). Theron (1932) wrote, the Dutch

East India Company were hesitant to “surrender” the profitable industry to the citizens of the Cape and provided the first vines for home gardens.

The famous Cape Hanepoot was the first table grape variety to arrive in South Africa in 1655 (Carstens *et al.*, 1981) and was included in the first variety list published in 1892, along with Waltham Cross and Sultana, known today as Thompson Seedless (THS) (Meintjies, 2019). This is still one of the largest cultivated varieties worldwide (Lo’ay, 2011). The variety range expanded and in 1909 when Prof A.I. Perold, the pioneer of varietal selection programs, brought 177 new varieties to South Africa from Europe (Meintjies, 2019).

In 1954, the Department of Agriculture (DOA) recognised physical and genetic plant material as the primary factor to improve production efficiency (PlantSA, 2018). In 1964, the South African Plant Improvement Association was established, which was followed by the establishment of Nietvoorbij Research Institute, as part of the Agricultural Research Council (ARC) that investigated, *inter alia,* genetic plant improvement. The ARC is equipped with quarantine facilities in Stellenbosch to identify virus-free deciduous fruit planting material, which could be cloned for production. The LNR Nietvoorbij Research Institute breed the first local table grape varieties namely; Dauphine, Sunred seedless, Bonheur and La Rochelle, which contributes to 35% of the total South African exported volume (Meintjies, 2019). Dauphine had a strong market window, with no other competition at the time and only later lost its market position to Crimson Seedless (CSS) (Meintjies, 2019). Today the most successful variety bred by the ARC is Joybells™ (Meintjies, 2019).

With the evolution of DNA testing came cultivar registration and intellectual property (IP) ownership. Table grape varietal trademark names may only be used with permission granted from trademark owners (DAFF, 2018). Producers are inclined to pay production and planting royalties rights, therefore, table grape growers are hesitant to plant varieties with strict IP rights (Meintjies, 2019). The IP holders in South Africa are TopFruit SA; Lombard Genetics, Special New Fruit Licensing South Africa (SNFL), International Fruit Genetics (IFG), Hoekstra Fruit Farms, ARC, Culdevco, Sun World Innovations and Dole South Africa. According to Meintjies (2019), in the 2010/2011 season, the export volume consisted of 13,36% royalty-bearing varieties and increased to 35,85% by 2015/2016. While other table grape producing countries such as Chile and Peru, only exported 2,7% and 4,38% royalty-bearing varieties, respectively, in 2015/2016. The top five varietal split in the 2019/2020 season, which contributes to more than half of a countries table grape export volume, emphasises this phenomenon. The non-bearing varieties accounted for 65,87% of the top five exported varieties from Peru, 86,71% from Chile and 55,66% from South Africa (Ferreira, 2020). Namibia is following a similar trend to South

Africa. Table grape growers in Namibia have been planting Topfruit, IFG and SNFL varieties (Meintjies, 2020).

2.3 Differentiation between table grape varieties

Table grapes and wine grapes are the fruit of different cultivars of the species *Vitis vinifera L.* (DAFF, 2018). A cultivar is a plant produced through selective breeding to differentiate it from other varieties (Hawkins, 1996). In variuous languages the word cultivar has not been adopted. The French have used the words *cépagne* and *variéte* for centuries, therefore according to Prof. J. Brannas of Montpellier in 1974, the word cultivar is "superfluous" (Pongrácz, 1978). The same applies to other languages such as German, Slavic (Pongrácz, 1978), Afrikaans and English[1]. From a botanist's and viticulturist perspective, there are variations in a plant species, which characterise varieties within the species (Pongrácz, 1978). Often varieties are a hybridization of two different varieties, thus, the variety is not pure and the word cultivar could be misleading (Pongrácz, 1978). Consumer use generic names such as green-, red-, black seedless or seeded grapes to differentiate between varieties[2] (Piva, Lopez Garcia & Morgan, 2006).

Table grape varieties are differentiated by intrinsic and extrinsic fruit attributes (Du Plessis, 1925). Intrinsic texture attributes are taste-related characteristics that determine fruit consumption experience and food acceptance (Tunick, 2011). The quality of taste determines the success of a new variety entering the market (Alavoine, 1992) and whether a customer will purchase the fruit again (Leong, Lamikanra & Theodore, 1996). Taste is defined by texture, flavour, aroma, seed content and skin thickness, friability and firmness (Cliff, Dever & Reynolds, 1996). Fruit flavour is defined by the initial juice release, sweetness, sourness and bitterness (Cliff *et al.*, 1996). Zhou et al. (2015) reported consumer preference increases with an increasing sugar level, measured in Brix. Consumer satisfaction increases once Brix reaches 16°, furthermore, consumers preference is sensitive to a change in 2° Brix (Crisosto & Crisosto, 2005). Thus, a 17° Brix level is suggested to ensure a larger consumer market share is reached (Zhou, Cao, Chen, Perl & Ma, 2015). Unmatured grapes have a higher acidity level and a low Brix level, which significantly influences consumer perception of generic groups and future procurements (Domingo & Herrera, 1970). More importantly, new varieties are providing alternatives to problematic varieties as new table grape varieties are more resilient against unfavourable weather conditions and quality disorders. According to Schulz (2020), large companies in Chile uprooted old varieties to plant new grape varieties. While South African farmers tend to select

[1] The English text book, Practical Viticulture, avoids the use of the word varieties and rather relates with the word variety (Pongrácz, 1978).
[2] Piva et al. (2006) reported consumer knowledge about commercial brands, the origin of table grapes and variety names is non-existent. Only 6% of the consumer interviewed in Madrid could name a local Spanish variety, Moscatel (Piva et al., 2006).

red grape varieties which have been cultivated before, such as the tested and trustworthy Crimson Seedless (CSS) (BFAP, 2019). Producers desire varieties that are disease resistant, tolerant to transportation and cold storage, produce large yields and have conical shape bunches with round berries that have a high sugar level (Wang *et al.*, 2017).

2.4 Table grape purchasing decisions in the market

Food purchasing decisions are based on extrinsic visual attributes (Cliff, Sanford & Johnston, 1999) and are highly influenced by freshness appearance and shape dimensions (Zhou *et al.*, 2015). Visual attributes are the primary characteristics consumers observe, such as berry and cluster size, bunch compactness, shoulder height, stem thickness, berry shape, colour uniformity and skin markings (Cliff et al., 1996). Other factors that influence purchasing decisions are convenience[3] of food consumption, price, intrinsic texture- and extrinsic visual attributes. Consumers prefer a medium bunch size (500g) with large seedless sweet and sour juicy berries that are firm, crunchy with a friable skin (Cliff *et al.*, 1996; Jack, O'Neill, Piacentini & Schröder, 1997; Leong *et al.*, 1996; Piva *et al.*, 2006; Zhou *et al.*, 2015). Furthermore, consumers prefer bunches with padded shoulders over drooping shoulders (Zhou et al., 2015). Wang et al. (2017) and Zhou et al. (2015) reported big oval to round berry shapes have a higher preference among Chinese consumers and producers. However, a smaller consumer segment is interested in trying new berry shape like long finger-shaped berries (Zhou et al., 2015).

Certain characteristics are demographic sensitive. Domingo and Herrera (1970) showed that older Argentinean consumers prefer grapes with a lower sugar level and a higher acidity level, while younger generations have an opposite preference. In 1892, Percy Molteno reported that consumer at Convent Garden, London, prefer red and black grapes (Meintjies, 2019). Similar to today's Asian and Chinese markets that have a higher preference for grapes with a bright red and dark purple uniform colour (Sun, Qian, Wu, Niu, Teng & Zhang, 2014; Wang *et al.*, 2017; Zhou *et al.*, 2015) with a small segment in the market who enjoy green cultivars (Zhou et al., 2015). While, Spanish consumers classify a good colour grape as a golden or yellow colour, similar to the muscatel local grape variety (Piva et al., 2006: 260) and the iconic Cape Hanepoot. Spanish consumers prefer berries that have thin skins (Piva et al., 2006), while, Chinese consumer prefer thick skin varieties (Zhou et al., 2015). Furthermore, the Chinese market shows a preference for elegant to strong Muscat flavours (Wang et al., 2017; Zhou et al., 2015) and enjoy sweet, juicy, soft varieties with a high acidity level, while only a small segment is interested to try new aroma-flavours (Zhou et al., 2015).

[3] Grapes are acceptable to eat while traveling (Jack *et al.*, 1997) and can easily be shared with others (Harker, Gunson & Jaeger, 2003: 342). Although, according to Spanish consumer table grapes are not easy to eat (Piva *et al.*, 2006). Chinese consumers remove the skin from berries, therefore thick skin, which is easier to remove, is considered a convenient characteristic (Zhou *et al.*, 2015).

2.5 The immemorial Thomson Seedless (THS)

Thompson seedless (THS) is an old, white, seedless table grape variety, which belongs to the Sultanina group[4]. THS is cultivated in many countries namely, California, Chile, Australia and South Africa (Ferreira, 2020). The variety remains the third largest exported variety in Chile and fourth in South Africa, contributing to 14,7% and 5,5% of the total exports, respectively (Ferreira, 2020). In a variety portfolio, the harvest period for THS starts mid-season. The majority of THS vines in South Africa are older than 16 years[5]. In 2019, the number THS vines reduced by 25%, the second-highest reduction in the vine census, after Flame Seedless (FMS) with 29% reduction (Ferreira, 2020). Thus, a significant decrease in THS yield is expected. However, THS is still cultivated in nurseries in South Africa. In 2018/2019, the number of THS vines lifted in nurseries were 209 327 (Ferreira, 2020), i.e. are grown by nurseries to be sold to producers.

THS is harvested in South Africa from week (wk) 46 in the Northern Province to wk 6 in the Hex River (Lombardt, 2018; Van Der Merwe, 2019). Kalili (2000) states, depending on the location the expected yield of THS can vary between 9 to 25 tonnes per hectare, which is equivalent (equiv.) to 2 000 – 5 000 4.5kg equiv. cartons per hectare. In the results discussed at the Berg River production symposium[6], the average yield for THS was 2 713 cartons per hectare, the highest was 3 846 and the lowest was 1 837 cartons per hectare (Van der Merwe, 2020). According to Kalili (2000), THS obtained the highest price per carton in the varietal portfolio studied in Namibia in 2000, which included other varieties such as Flame Seedless (FMS), Festival and Muscat seedless (MSS). In 2005, THS was sold for $2,99 per pound in the food markets of New York City (Fabricant, 2005), which is considerably low compared to the organic variety, Bronx Seedless, that was sold for 6,99 per pound in 2016 (Fabricant, 2016).

Van der Merwe (2019) confirms with the correct canopy management strategy, 70-80% of the berries will yield extra-large (XL). THS is sensitive to the growth regulator gibberellic acid (GA_3), especially in the first production years (Van Der Merwe, 2019). Farm managers must be attentive to the canopy management strategies to prevent quality disorders. THS is sensitive to rain and severe temperature change which causes berry splitting[7] (Van Der Merwe, 2019) before and after harvest, thus increasing

[4] The variety has two prominent clones, H4 with a round berry and H5 with a more longitudinal berry (Van Der Merwe, 2019).
[5] In South Africa, 514 ha of THS vines are older than 16 years, while 117 ha are 10-15 years old, 189 ha are 4-9 years and 113 ha are three years and younger (Ferreira, 2020).
[6] The production performance of 69 farmers was discussed in November 2020 at the Berg River table grape production symposium (Van der Merwe, 2020).
[7] Berry splitting is a yeast infection caused by *Cladosporium herbarum* and sour rot (Fernández-Trujillo, Obando-Ulloa, Baró & Martínez, 2008). The disorder is common among vitis vinifera varieties (Considine & Kriedemann, 1972; Swift, May & Lawton, 1974). The change in berry shape, from spherical to oval, cause longitudinal fractures on the berry cheek, while circumferential ring fractures are normally around the pedicel (Considine & Brown, 1981). Micro-cracks around the stylar-end on the berry are increased with excessive irrigation (Sekse, 1995).

susceptibility to Botrytis. THS is also prone to sunscald damage[8] (Van Der Merwe, 2019), berry shatter[9] (Lydakis & Aked, 2003; Van Der Merwe, 2019), berry shrivelling[10] (Crisosto, Smilanick, Dokoozlian & Luvisi, 1994), rachis browning[11] (Crisosto *et al.*, 1994) and berry softening[12] (Christensen & Boggero, 1985).

2.6 The table grape industry in South Africa

South Africa is the 7th largest table grape exporter in the world (ITC Trade Map, 2020) and is known to be the oldest and most reliable supplier of table grapes to the European market in the northern hemisphere (Vilakazi, 2011, 2012). Chile and Peru are known to be the largest supplier of table grapes to Europe and China (Bestbier, 2020; Ferreira, 2020; ITC Trade Map, 2020). The researchers at NEPRU in Namibia[13] concluded, the best time to enter the European (EU) market is in the second week of December, wk 49, to receive the highest price (Kalili, 2000), which was supported at the Berg River table grape production symposium (12 November 2020). According to Van Der Merwe (2020), the best time to supply table grapes to the (EU) market is from wk 51 to wk 6 when supply from other countries is low (Van der Merwe, 2020). The other table grape markets South Africa exports to are Hong Kong, India, Indonesia, Japan, South Korea, Malaysia, Philippines, Thailand and Vietnam (Bestbier, 2020).

In the 2019/2020 season, Chile contributed 49% of the total table grape exports from the southern hemisphere, while Peru contributed 19%, South Africa 20% and Namibia 2% (Ferreira, 2020). In the 2019/2020 season, South Africa exported 66,15 million 4,5kg equiv. cartons (Ferreira, 2020) of which 75% were exported to Europe and the United Kingdom (Bestbier, 2020). South Africa differentiated 5% of the total exports away from these markets since 2014 (Bestbier, 2020) to address the saturated

[8] Sunscald damage is the discolouration of fruit bunches due to intense sunlight or heat spikes in cooler regions. Grape colour turns brown and berry shatter and shrivelling appear. Fruit bunches are vulnerable after veraison when berries start to soften (Barber & Sharpe, 1971).

[9] Berry Shatter, also known as berry drop, is the loss of berries from the fruit stem, which is directly influenced by water loss (Lo'ay, 2011). Respiration and ethylene peaks forms the abscission layer, known as the separation zone at the pedicel of the berry (Ge *et al.*, 1997; Lydakis & Aked, 2003). Berry shatter is less severe for bunches in more shady areas and increases with repetitive handling during harvest (Lo'ay, 2011).

[10] Berry shrivelling occurs when water loss exceeds 3,7% (Crisosto *et al.*, 1994).

[11] Rachis browning occurs due to dehydration during pre- and post-harvest (Nelson, 1985), which severely affects appearance and quality, therefore reduces price (Balic, Moreno, Sanhueza, Huerta, Orellana, Defilippi & Campos-Vargas, 2012). The quality disorder is addressed with cooling and packaging with SO_2 exposure (Lichter, Zutahy, Kaplunov & Lurie, 2008). Slightly immature bunches are less susceptible to rachis browning (Retamales, Defilippi, Arias, Castillo & Manríquez, 2003). Synthetic growth regulators increase rachis dehydration (Carvajal-Millán, Carvallo, Orozco, Martínez, Tapia, Guerrero, Rascon-Chu, Llamas & Gardea, 2001).

[12] Berry softening, also known as waterberry, occurs shortly after véraison. Berries become soft and watery and small brown spots appear on the pedicel (Sabir & Sabir, 2009). Excessive fertilisation with high nitrogen levels causes ammonium toxicity which instigates the physiological waterberry disorders (Christensen & Boggero, 1985).

[13] The major table grape production region in Namibia is Aussenkehr (Kalili, 2000; Meintjies, 2020) located on the other side of the Orange River. The harvest season in Aussenkehr commences in week 45 (Meintjies, 2020). According to exporters, Namibia is expecting export of 7,4 million 4,5kg cartons for the 2020/2021 season which is an increase from 6 million cartons in the previous year (Meintjies, 2020).

market. According to Bestbier (2020), South Africa will have to export 10 million cartons to China annually from 2025 onwards to negate the saturated market in Europe. The Chinese market is growing (Bestbier, 2020) and buyers are prepared to pay a premium price on imported grapes (Bestbier, 2016). The market grew annually with 30% from 2010 to 2014 (Bestbier, 2016) and is now the fifth-largest table grape importer globally (ITC Trade Map, 2020). South Africa has been the fourth biggest exporter to China since 2014 (Bestbier, 2016; ITC Trade Map, 2020).

SATI launched a campaign to validate the prerequisite Chinese specifications in an attempt to develop the market in the Far East (Bestbier, 2020). The Far East market development plan is managed and funded by SATI with additional funds granted from the Western Cape Department of Agriculture (Bestbier, 2020). Both organisations have committed money to the market development program (Bestbier, 2020). In 2016, SATI and the Department of Agriculture, Forestry and Fisheries (DAFF) confirmed the deregulation of cold treatment protocols of China to ease imports from South Africa (Bestbier, 2016). The previous protocol[14] was -0,6°C for 22 days and is now +0,8°C for 20 days (Bestbier, 2016). The shorter cooling prerequisite reduces the time buffer before grapes are shipped to the market. Since the deregulation, exports to China from SA have only grown from 2,3 million to 3,3 million 4,5kg equiv. cartons since the 2015/2016 to 2018/2019 season[15] (Ferreira, 2020). The largest export volume was in 2016/2017 with 4,8 million (Ferreira, 2019, 2020; Lombardt, 2017), well export volumes in 2019/2020 decreased to 2,9 million 4,5kg equiv. cartons[16]. Before the deregulation, the exports in black seedless (BS) varieties increased with 497% to the Far East from the 2009/2010 to 2014/2015 season (Vilakazi, 2014). The improved market access to China should be considered when table grape farmers select new varieties to cultivate (Bestbier, 2016).

2.7 The age of vines in South Africa

The vine census in South Africa indicates that vines older than 10 years are decreasing as the vines are replaced with more productive varieties (Bestbier, 2020). The vine age groups are divided into four groups, 0-3 years, 4-9 years, 10-15 years and older than 16 years. The older groups, age 10-15 and older than 16 years, have decreased from 19% and 21% in 2018 (Lombardt, 2018) to 16% and 18% in 2020, respectively (Ferreira, 2020). Both these older age groups combined account for 34% of the South African vine census (Bestbier, 2020; Ferreira, 2020). The percentage of vines between 4-9 years

[14] The prerequisite cooling reduces the possibility of exported the medfly to the market and prevents to outbreak of the plague in the imported country. Large attempts have been made in Chile (Sims, 1996) and California (Sims, 1994) to suppress the medfly population. The plague should be control in the exporting company to prevent the enrolments of the prerequisite cooling protocol for all markets. American state official announced the California.
quarantine effect on the American economy will be destructive to the economy (Sims, 1994)

[15] Peru and Chile combined export 33,3 million 4.5kg equivalent cartons (Bestbier, 2016). Both Peru and Chile are obligated to lower protocol treatments and tariffs than South Africa (Bestbier, 2016).

[16] The lower exports the Far East could be due to rain before harvest which reduces shelf life or due to the market conditions in China, e.g. a pandemic in the country causes certain markets to close.

is increasing and currently accounts for 39% of South Africa's vine census (Bestbier, 2020; Ferreira, 2020). While, 27% of the vine census consists of vines that are three years and younger (Bestbier, 2020; Ferreira, 2020). Bestbier (2020) states, South Africa can expect an increase in yield as recently planted vines mature and become productive. According to Kalili (2000), yield is significantly influenced by a vine's age. A vine produces 33% of its potential yield by the end of year two, 80% by the end of year three and 100% at the end of year four (Kalili, 2000; Theron, 1932). These age production percentages correspond to the figures discussed at Berg River table grape production symposium, which reported the production and price performance of the Berg River table grape region in South Africa[17] (Van der Merwe, 2020).

2.8 Table grape production in South Africa

Bestbier (2018) reported that table grape production in South Africa is increasing and that, "good winter rains to date have largely broken the severe drought in the Western Cape". Furthermore, in recent years farmers have planted new varieties and are expecting an increase in yield up to 70 million 4,5kg equiv. cartons in the upcoming years (Bestbier, 2018). The harvest in the 2019/2020 season has already shown a 6% increase year-on-year (YoY) as exports have increased from 59 413 185 to 63 172 875 4,5kg equiv. boxes (Ferreira, 2020). The 6% YoY proves South Africa could soon exceed the yield of 65,5 million equiv. cartons harvested in 2016/2018 season (Ferreira, 2020).

Despite the severe drought South Africa experienced from 2015 to 2018, the average yield from the 2014/2015 season to the 2019/2020 season increased annually with 4,59% (Bestbier, 2020). In the 2015/2016 season, South Africa harvested 57,9 million 4,5kg equiv. boxes, which has increased to 66,1 million in the 2019/2020 season (Ferreira, 2020). There has been a notable decline in black seeded (BG), red seeded (RG) and white seeded (WG) grapes since 2015/2016[18]. Red seedless (RS) grapes have been the largest varietal group exported from SA since 2015/2016 and have increased with 44% to 31 million 4,5kg equiv. cartons up to the 2019/2020 season (Ferreira, 2020). This is no surprise as CSS, a RS variety, is the most planted variety in South Africa. There are 7 426 591 CSS vines planted in SA of which 83% are in full production[19] (Ferreira, 2020). The contribution of white seedless (WS) grapes to the total SA yield has remained constant at ± 19 million 4.5kg equiv. cartons (Ferreira, 2020). However, there has been a considerable change in the white varietal group portfolio. The YoY for THS and Superior Seedless® (SGO) has decreased with 25% and 20% and increased with 20% and 34% for

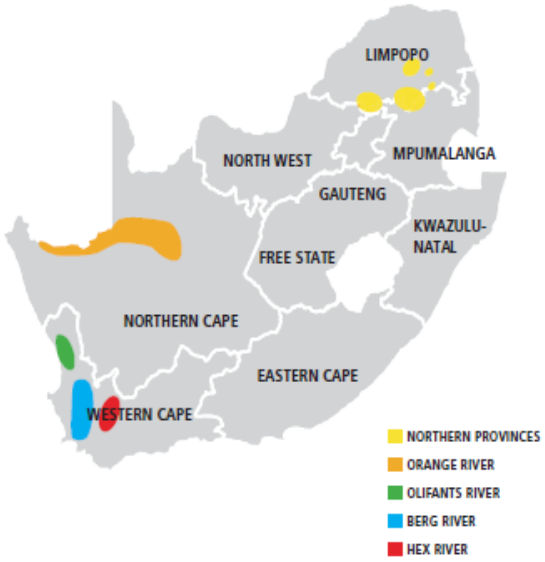
[17] Varietal production performance divided vine age in four categories to conduct a comparable analysis. A one-year old vine planted in the previous year produces no yield, a vine planted two years prior to the study produces 30%, while a three year old and four year old vine produces 70% and 100% of the potential yield, respectively (Van der Merwe, 2020).
[18] Based on recent statistics, black, red and white seeded grapes have declined with 62,25%, 37,34% and 71%, respectively, since 2015/2016 to 2019/2020 (Ferreira, 2020).
[19] The second most planted variety is PSE with only 3,2 million vines of which 84% are in full production (Ferreira, 2020).

Autumn Crisp ® (S35) and Sweet Globe™ (I10), respectively (Ferreira, 2020). The contribution of black seedless (BS) to the total exports increased with 36% since the 2015/2016 to 2019/2020 season (Ferreira, 2020). The BS yield is expected to increase as 80% of the 776 002 Sweet Joy™ vines, a BS varietal, is three years and younger (Ferreira, 2020).

2.9 The five table grape production regions in South Africa

There are five main table grape production regions in South Africa, the Northern Province, Orange River, Olifants River, Berg River and Hex River. Vine growth, fruit maturity and the required canopy management strategies are unique[20] in each region. The harvest season in South Africa starts in the Northern Province with Prime® (PSE) and Early Sweet (ELS) in week (wk) 43[21] or 44 in October (Ferreira, 2019, 2020; Lombardt, 2015, 2016, 2017, 2018; Vilakazi, 2014) and ends with CSS in wk 18 (Ferreira, 2019, 2020; Lombardt, 2018), although in 2013 and 2014 the season ended with Dauphine in wk 19 and 20, respectively (Vilakazi, 2013, 2014).

Figure 2.1: The five table grape production regions in South Africa



Source: SATI 2018 Statistical booklet (Lombardt, 2018)

The harvest season moves from the North Province in a south-west direction to the Orange River, Olifants River, Berg River and ends in the Hex River. The difference in harvest weeks for THS in each region is presented in table 2.1. Weather can however influence the harvest date. In the 2017/2018 season, THS was harvested much earlier in all the regions[22]. The current study is focused on the Berg River region, plotted on blue in Figure 2.1. The harvest season in the Berg River typically starts with PSE in wk 48

Table 2.1: Harvest period for THS in five regions

	Harvest	
Region	Opening week	Closing week
Northern Province	45	1
Orange River	51	5
Olifants River	2	6
Berg River	3	8
Hex River	3	10

Source: Adopted from Vilakazi (2014)

[20] SNFL varieties require more Gibberellic acid (GA_3), a plant growth regulator, or two application when berries are 4-5mm in diameter in the Orange River, while one application of GA_3 is required in the Western Cape when berries are 6-8mm in diameter (Snfl Group, 2019).

[21] Meintjies (2020) reported the first table grapes in Southern Africa are harvested in the last wk of October, wk 43, in Ais-Ais, Namibia.

[22] THS was harvest in wk 50-6 in the Orange River, wk 53-3 in the Olifants River, wk 1-6 in the Berg River and wk 2-7 in the Hex River (Lombardt, 2018).

and ends with CSS and Scarlotta Seedless® (SGE) in wk 13 (Ferreira, 2019, 2020; Lombardt, 2017, 2018).

2.10 The influence of weather on yield and fruit quality

Cold temperatures prevent flower caps to fall off, therefore pollination cannot occur resulting in bunches with *millerandage* (Theron, 1932). *Millerandage* is also known as shot berries or "hen and chicken and pumpkins and peas" (Jackson, 2014). Shot berries need to be removed by hand and therefore increases labour requirements significantly. Low winter temperatures do not pose a threat to vineyards. In Europe vineyards covered with snow for a long period of the year are unaffected (Theron, 1932). High temperatures can initiate early bud burst which increases the risk of frost damage in September (Theron, 1932).

Although uncommon in the production regions in South Africa[23], frost that occurs during the bleeding phase of a vine in September and October is harmful to new growth (Theron, 1932) and can wipe out 70-80% of the crop (Kalili, 2000). Wind[24] and rain can be devastating to fruit quality. Even a slight downpour[25] can induce susceptibility to several pathological disorders, namely *Botrytis cinerea* (black rot) and powdery mildew (Theron, 1932).

Produces are constantly battling plant diseases that are associated with unfavourable weather. Humidity and frequent summer rains encourage the development of pathological diseases (Hillebrand, 1957; Van der Merwe, Joubert & Matthee, 1972; Perold, 1926; Theron, 1932), namely, *Botrytis cinerea* (black rot), powdery mildew (*oidium)* and downy mildew (brown rot). *Oidium* and brown rot are indigenous to North America (Pongrácz, 1978). Black rot is known to infect the berries, while *oidium* and brown rot also infects the green parts of the vine (Pongrácz, 1978). Once *véraison* starts the susceptible period to brown rot and *oidium* is over (Perold, 1926; Pongrácz, 1978; Viala, 1893; Vogt & Gotz, 1977), but grapes are still susceptible to black rot to the end of its days. However, varieties differ greatly to the susceptibility of pathogenic infections (Goussard, 2015; Pongrácz, 1978).

Producers need to be compliant with the biological and chemical limits specified in Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972). Unless the limits of the importing country are lower than the permissible terms, otherwise the executive officer will provide a warrant to export grapes to a country with higher permissible limits (DAFF, 2018). The chemical treatments of

[23] Although uncommon, frost does occur in the Hex River in September and October. According to Kalili (2000), there has been no frost recording in the Orange River and Aussenkehr area.

[24] The Berg River region receives excessive winds in the summer months which can be harmful to grape quality (Theron, 1932).

[25] Wellington and Piketberg, two table grape production areas in the Berg River region of SA, received 14mm of rain in December in 2018 and 2019 and another downpour with 9,4mm and 26,8mm of rain in January in 2019 and 2020, respectively (Frome, 2020).

pathogenic infection and insect infestations leaves a residue on the berries[26], therefore chemical treatments should be used in a timely manner (Hortgro, 2020). Food companies test fruit for residue to convince consumers the fruit is safe to eat (Schneider, 1989). Great concern was raised when the National Academy of Science published a report in 1987, that listed 28 pesticides used to battle fungi which could increase cancer cases with 1,46 million over the next 70 years (Schneider, 1989). That event increased food safety awareness and in 1989, supermarkets in New York planned to remove table grapes from the shelves (Eric Semler, 1989).

2.10.1 Downy Mildew (Brown rot)

Downy mildew penetrates the green parts of the vine and germinates for several days during the incubation period before being spread to other leaves by wind and rain (Pongrácz, 1978). The severity of infection increases with a minimum of 4-5mm of rain, a minimum temperature of 12°C and a wet period of at least 30 min (Hillebrand, 1957; Vogt & Gotz, 1977). Downy mildew spores can only germinate in water (Hillebrand, 1957; Perold, 1926; Ravaz & Verge, 1921; Viala, 1893; Vogt & Gotz, 1977). Temperatures above 32°C will kill the fungus (Hillebrand, 1957; Perold, 1926; Ravaz & Verge, 1921; Viala, 1893). When infected, light yellow patches are apparent on leaves and the pathogen kills leaf cells and causes leaves to drop (Pongrácz, 1978). Shoots are only slightly damaged, while the entire fruit bunch is susceptible to infection, i.e. the stalk, pedicel, flower cluster and berries (Pongrácz, 1978). Berries turn brown, shrivel and shatter (Pongrácz, 1978). Severe infection is treated with a copper mixture late in the growing season[27] (Pongrácz, 1978).

2.10.2 Powdery Mildew (Oidium)

Oidium is the most common vine disease in the Western Cape (Perold, 1926). The pathogen, *oidium tuckeri*, causes powdery mildew infection, which grows on the surface of the green parts of the vine (Pongrácz, 1978). Infected vines have white, powdery mildew on the shoots, leaves and young berries and infected unripe berries crack (Pongrácz, 1978). The fungus can survive the winter in the bud scales of the cane or in the soil (Van der Merwe *et al.*, 1972; Perold, 1926; Winkler, Cook, Kliewer & Lider, 1974). The emergence of *oidium* occurs when temperatures increase (Pongrácz, 1978). Although, long direct sun exposure may kill the pathogen (Winkler *et al.*, 1974). The pathogen can be controlled with a sulphur spray application (Perold, 1926).

[26] The table grape market is sensitive to the use of toxic chemical. Unions have evolved since the 1970's to boycott table grapes in attempt to encourage producers to use fewer toxic pesticides. The New York Times (2000) reported the union has managed to eliminated five toxic chemicals which is harmful to farm workers.

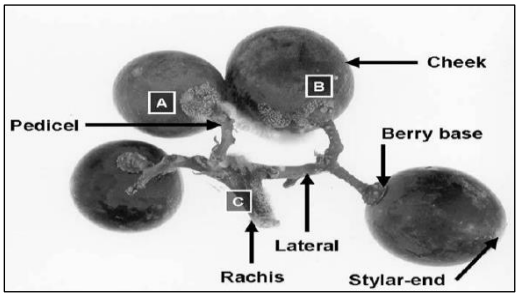
[27] Copper has an inhibiting effect on the growth of meristematic tissue thus should be used late in the grow season (Pongrácz, 1978).

2.10.3 *Botrytis cinerea* (Black rot)

The low physiological process within fresh fruit results in high susceptibility to the pathogen, *Botrytis cinerea Pers. Ex Fr* (Crisosto *et al.*, 1994). The pathogen infects canes, leaves, buds and fruit bunches (Nair & Hill, 1992) and causes the development of gray mold (Luvisi, 1992), also known as bunch rot. Bunch rot appears early-on, from berry development, right through harvest and even in cold storage (Holz, Gütschow, Coertze & Calitz, 2003; Latorre, 1986). The pathogen moves through water, air (Jarvis, 1962) and is translocated with the trimmers' scissors' (Luvisi, 1992) as single cells (Coertze & Holz, 1999, 2002; Holz, 1999) and adheres to the berry surface. Spores germinate in wet, dry or moist conditions and do not easily penetrate the fruit skin (Holz *et al.*, 2003). A moist wound on the berry surface is an endorsing factor for infection (Coertze & Holz, 2002; Nair, Emmett & Parker, 1988; Perold, 1926; Winkler, Cook, Kliewer & Lider, 1974). Fine longitudinal cracks that are almost invisible, known as hairline fractures[28], exudates juice, leaving a wet and sticky substance[29] on the berry surface (Cappellini, 1986; Sabir & Sabir, 2009), which is ideal for Botrytis infection. Hairline cracks are side effect caused by high SO_2 fumigation used in packaging to reduce decay (Gao, Hu, Zhang, Wang & Liu, 2002; Zoffoli, Latorre & Naranjo, 2008). Zoffoli et al. (2007) reported hairline fractures are directly influenced by delayed cooling. Delayed cooling promotes condensation, therefore, SO_2 concentration increases (Laszlo, Combrink, Eksteen & Truter, 1981). Other influencing factors are berry shape, growth development, weather conditions and management practices (Zoffoli, Latorre & Naranjo, 2007). The pathogen cannot survive for long period on a wet or moist berry surface (Coertze & Holz, 2002; Coertze, Holz & Sadie, 2001). The most efficient control treatment is the removal of basal leaves (Gubler, Marois, Bledsoe & Bettiga, 1987; Pongrácz, 1978).

Immature berries are not bound to infection (Savage & Sall, 1982). Nair and Parker (1985) and McClellan (1973) reported the pathogen remains dormant after incubating immature berries, therefore, clusters do not show symptoms of infection until fruit ripening (McClellan, 1973; Nair & Parker, 1985). Mature berries are more susceptible to infection (Nair & Hill, 1992; Nelson, 1956). The airborne *Botrytis cinerea* pathogen penetrates the skin of fresh ripe berries (Coertze & Holz, 1999) and growing berries (Coertze & Holz, 1999; Coertze *et al.*, 2001; Nelson, 1956). Botrytis cinerea infects several parts of the vineyard. The first symptoms of bunch rot are apparent on berries (Nair & Hill, 1992) during fruit veraison when

Figure 2: Positions in a Grape Bunch



Source:(Holz *et al.*, 2003)

[28] Over-cropped green cultivars are highly susceptible to hairline fractures (Zoffoli *et al.*, 2007)
[29] Capellini et al. (1986) reported the sticky wet substance was detected in 42%, of the 8000 shipments, inspected in the USA.

sugar levels increase (Gubler *et al.*, 1987: 599). Leaves are not highly susceptible, only in long wet period will leaves develop spots that produce spores (Nair & Hill, 1992). Cells will remain dormant on the leaf surface until temperatures reach 20°C in spring (Nair & Nadtotchei, 1987). Rachis infection is a result of indirect contamination from floral debris (Savage, 1984) or attached berries (Hill, 1985). Holz et al. (2003) determined which positions in **Error! Reference source not found.**2 are more bound to Botrytis infection. Results indicated that 30% infection predominantly occurred at the berry base and the pedicel. Another 20% of infection was found on leave blades, rachis, and on the pedicel. Only 10% infection occurred on petioles, 5% on the berry cheek and 0.02% on the stylar-end. The pathogen can invade the stigmata during bloom and will remain latent in the stylar-end of the berry (McClellan, 1973; Nair & Parker, 1985). However, Pezet and Pont (1986) reported no evidence of infection at the stylar-end and stated that latent infection is present at the berry base. Other entry points for the pathogen are through the pedicel (Michailides, Morgan, Felts & Peacock, 2000) natural openings and direct penetration into the cuticle (Pezet & Pont, 1986).

2.11 Table grape cultivation

The rest of the chapter will discuss the various phenological stages of a vine and the canopy management strategies performed to improve vine growth, yield, and fruit quality.

2.11.1 Phenological stage/annual life cycle of a vine

The various phenological stages of a vine are discussed in two distinct phases imposed by Galet (1973), namely, the vegetative and reproductive phase. The vegetation phase refers to vigour, while the reproductive phase refers to the fruit.

2.11.1.1 Vegetative phase

The vegetation phase refers to vigour, which is discussed in sequential order, starting with vine bleeding, bud burst, vine growth, wood ripening and the dropping of leaves.

2.11.1.1.1 Bleeding of the vine

The first sign of growth occurs shortly after a vine is winter pruned when "bleeding"[30] occurs from the cut ends of the canes or spurs (Jackson, 2014). Bleeding is starts when the soil temperature, at a depth of 25cm, reaches 10,2°C (Perold, 1926). Although bleeding does not harm the vine (Pongrácz, 1978), Guillon (1905) and Perold (1926) recommend pruning vines when bleeding is low[31]. The compounds

[30] The bleeding liquid is referred to as "sap", which is stored starch (Jackson, 2014) that contains organic compounds such as Organic compounds such as sugar and amino-acids (Campbell & Strother, 1996) and inorganic compounds, growth regulators and inorganic nutrients (Jackson, 2014).

[31] The amount of bleeding varies from 0,5 to 5,5 litres per vine (Perold, 1926).

are absorbed by newly developed roots and translocated[32] with xylem[33] to the pruned wound (Guillon, 1905; Perold, 1926) to initiate bud reactivation and vine growth (Jackson, 2014). Carbohydrates in the vine trunk and roots (Kövesssi, 1901; Weaver, 1976) decrease significantly during translocation (Bennett, Jarvis, Creasy & Trought, 2005)[34].

2.11.1.1.2 Bud-break

Generally, buds open twenty to thirty days after bleeding (Guillon, 1905). However, the timing of bud burst is dependent on temperature[35] (Jackson, 2014; Pongrácz, 1978), variety (Guillon, 1905; Jackson, 2014; Perold, 1926), prune date, prune method, vigour and soil characteristics (Guillon, 1905; Perold, 1926)[36]. Buds activate from the cane tip towards the base of the cane as the phloem regains its functionality (Jackson, 2014). Perold (1926) reported in the years 1914-1917, in the Western Cape bud break typically occurred after the rainy season between 20 August and 15 September. Perold (1926) noted, bud burst for a specific variety did not occur on the same date over the years and that there is a notable difference in the timing of bud break between varieties break occurred for the earliest variety, Madaleine Angevine on the 5th of August 1917, while bud break for Red Hanepoot occurred on 20 September 1914 (Perold, 1926).

2.11.1.1.3 Shoot growth

Vine growth is altered by winter pruning. The lateral bud in the leaf axil remains dormant until the meristem is removed when pruned (Pongrácz, 1978)[37]. Vine growth, also known as elongation, is a result of cell division (Pongrácz, 1978) within cell tissue (Perold, 1926)[38]. Shoots grow from burst buds at an irregular speed (Pongrácz, 1978), which increases as day temperatures rise and will reach a maximum pace when flowers begin to open (Flaherty, 1982). When berries start enlarging, shoot elongation slows down and ceases after a while (Galet, 1973; Guillon, 1905; Perold, 1926). The phenomenon is due to a change in demand for carbohydrates[39] from shoots to berries (Flaherty, 1982; Pongrácz, 1978).

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[32] Translocation is the transport of organic and inorganic compounds from one part of the plant to the next. The upward movement of the compounds occurs in a xylem liquid and the downward translocation in a phloem liquid (Pongrácz, 1978).
[33] The rate of upward translocation through xylem is dependent on the rate of water absorption (Pongrácz, 1978)
[34] Between bud burst and 50% bloom, starch and sugars in the roots may decline with 42% and 72%, respectively (Jackson, 2014). While soluble sugars in the trunk can decline with 92% (Jackson, 2014).
[35] Bud burst occurs at a minimum temperature of 10°C in spring (Flaherty, 1982; Pongrácz, 1978)
[36] Root formation does not influence bud break (Perold, 1926).
[37] The growth inhibiting effect is known as apical dormancy (Hegedűs et al., 1966; Weaver, 1976).
[38] Young cells divide into two daughter cells, which are separated with a new cell wall (Pongrácz, 1978). The daughter cells grow and divide into more cell once the cells are as large as the original mother cell (Pongrácz, 1978). The group of cells are called cell tissue (Perold, 1926).
[39] Once berries start to enlarge and shoot growth slows down, the majority of carbohydrates are translocated to the berries and root growth significantly increases (Flaherty, 1982; Pongrácz, 1978).

2.11.1.1.4 Winter dormancy

The annual-life cycle of a vine ends in autumn (Pongrácz, 1978) when winter dormancy commences (Jackson, 2014). The phenological period is prominent from the autumn-reddish coloured leaves, which fall of the vine when shoots mature and turn reddish-brown (Flaherty, 1982; Pongrácz, 1978)[40]. Winter dormancy provides a window for grape growers to attend to other vineyard activities (Jackson, 2014), e.g. drainage and removing and establishing vineyard blocks. Vines can be severely winter pruned as phloem is inactive during winter dormancy (Esau, 1960), therefore, nutrients are not translocated from the canes to the root (Pongrácz, 1978).

2.11.1.2 Reproductive phase

The reproductive phase refers to the fruit and the initiation of an inflorescence, blooming (floraison), fruit-set and berry development.

2.11.1.2.1 The initiation of an inflorescence

The start of the reproductive phase is known as inflorescence or anthesis, which is the initiation of the flower cluster in summer (Galet, 1973; Hegedűs, Kozma & Németh, 1966; Pratt, 1974). Inflorescence can be significantly retarded by several factors such as over-cropping, drought, downy mildew (Pongrácz, 1978), nitrogen stress (Guilpart, Metay & Gary, 2014) and the position of the bud on the shoot (Winkler, 1962). Inflorescence is retarded for buds situated at the base of the shoot as carbohydrate accumulate earlier for buds borne between nodes four and eight (Winkler, 1962).

2.11.1.2.2 Blooming or floraison

Eight weeks after bud break, the fruit flower develops in spring, known as floraison or blooming (Pongrácz, 1978), which occurs for eight to ten days (Guillon, 1905; Perold, 1926; Weaver, 1976). However, factors such as vine age, variety and the weather can influence the occurrence (Pongrácz, 1978). Flowering occurs when the flower bud opens (Jackson, 2014; Pratt, 1971). The calyptras fall from the flowers (Pongrácz, 1978) as it separates from the ovary base (Jackson, 2014). Pollen is released from the anthers of the stamens (Weaver, 1976) and moves through the style to the embryo sac where fertilization occurs (Weaver, 1976). *Vitis vinifera* varieties are typically self-pollinated as pollen falls on the stigma (Jackson, 2014). Berries of unfertilised flowers fall off after bloom (Jackson, 2014), which typically occurs within the first twelve days (Galet, 1973). In certain varieties fruit set, the following phenological stage occurs without fertilisation (Pongrácz, 1978) The phenomenon is

[40] The colour change in shoots is a result of the internodes that start to die from the base of the shoot towards the tip (Flaherty, 1982; Pongrácz, 1978). The brown shoot is referred to as the cane (Pongrácz, 1978).

called *parthenocarpy*, which means "virgin fruit formation" (Pongrácz, 1978). The application of gibberellin or kinin induces parthenocarpy in normal seeded varieties (Pongrácz, 1978).

2.11.1.2.3 Fruit set

After flowering cell division continues for a short period (Pongrácz, 1978). However, the phase is more focused on cell enlargement, which stagnates when berries mature (Pratt, 1971). As cells enlarge berry development occurs and the ovary develops a fleshy fruit known as the berry (Pongrácz, 1978). The initial stages of berry development are called fruit-set (Pongrácz, 1978). The fruit set period varies among regions, weather conditions (Pongrácz, 1978) and is significantly influenced by carbohydrates (Poupin, Matus, Leiva-Ampuero & Arce-Johnson, 2011). During berry set, the ovary-wall prevents the formation of the abscission layer[41], also known as the separation zone (Lydakis & Aked, 2003), in the pedicel of the berry (Pongrácz, 1978). The abscission layers forms when the cell walls in the top layer of the ovary-wall become weak and once the bottom cells expand during berry enlargement the berry attachment is jeopardized (Lo'ay, 2011). Berries that do not develop drop from the fruit stem at the end of fruit-set (Pongrácz, 1978). This phenomenon is called berry shatter (Pongrácz, 1978). Even more severe abscission is *coulure*, also known as *shelling*, which is the formation of straggly clusters (Pongrácz, 1978). Coulure is a result of poor pollination, incomplete fertilisation, defective flower parts, poor nutrients (carbohydrates) and viruses (Winkler, 1962). Pedicels and pistils drop after flowering (Muller-Thurgau, 1908; Perold, 1926) and the flower is left naked.

2.11.1.2.4 Development of grape berries

After fertilisation, the embryo and berry start to develop (Jackson, 2014). Initially, berry enlargement increases rapidly, followed by a short period with no increase in berry volume or weight (Flaherty, 1982). Before the ripening period, berry growth and sugar accumulation start to increase (Flaherty, 1982). There are three distinct berry growth stages, first, the green or growing grape stage, second, the ripening stage and third, the overripe stage.

2.11.1.2.4.1 Green stage

Sugars produced in leaves stimulate the growth of roots, shoots, leaves and berries (Hegedűs *et al.*, 1966; Vogt & Gotz, 1977). Initially, sugars remain low in the berries[42] during the green phase and slowly increase towards the end of the phase while berry acidity[43] is vice versa (Pongrácz, 1978). High

[41] Abscission is a process of cutting off or violent separation, therefore, abscission is used to describe the shedding of any plant organ regardless of the process (Sexton & Roberts, 1982).
[42] Sugars in a grape are mainly glucose and fructose (Pongrácz, 1978). During berry growth the majority of sugars are glucose and the ratio between fructose and glucose is equal at once the berry is mature (Winkler, 1962). While in overripe berries the majority of the sugar content is fructose (Winkler, 1962).
[43] The "principal acids" in berries are tartaric, malic, citric, ascorbic and phosphoric (Pongrácz, 1978). Over 90 percent of the acidity is constituted from tartaric and malic acids (Hegedűs *et al.*, 1966).

temperature is required to metabolize acids in respiration, while low temperatures are required to stimulate the formation of acids (Pongrácz, 1978).

2.11.1.2.4.2 *Véraison*

The second growth stage occurs when berries start to ripen, known as véraison (Pongrácz, 1978). When the berry reaches three-quarters of its full size, primary shoot growth ceases (Jackson, 2014; Pongrácz, 1978). However, leave functions still continue, such as the production of carbohydrates which is translocated to berries to increase the sugar percentage (Guillon, 1905; Hegedűs *et al.*, 1966; Peynaud, 1984). In the ripening period a waxy bloom forms on the berry skin (Pongrácz, 1978), known as the epicuticular wax layer. Epicuticular wax is a protective coating on the berry surface (epidermis) to provide resistance to bunch rot (Marois, Nelson, Morrison, Lile & Bledsoe, 1986), preserves grapes from aromatic substances, protect berries against sunburn (Pongrácz, 1978) and act as a barrier against dehydration (Lo'ay, 2011). The wax bloom is reduced by friction caused by berries rubbing against one another (Fienberg, 1980), air pollution (Swiecki, Endress & Taylor, 1982), plant pathogens (Davies, 1961; Honkanen & Virtanen, 1960; Martin, Batt & Burchill, 1957; Rawlinson, Muthyalu & Turner, 1978; Skoropad, W.P., Tewari, 1977), fruit handling (Marois et al., 1986: 296) and water loss (Téllez, Sánchez, Baez, Siller, González & Gardea, 1994). The poor development of the epicuticular wax layer increases decay vulnerability (Zoffoli *et al.*, 2008: 183), dehydration (Téllez *et al.*, 1994), susceptibility to microorganisms (Marois *et al.*, 1986) and reduces shelf life.

2.11.1.2.4.3 Overripe stage

Berry quality is reduced significantly in the overripe phase (Pongrácz, 1978). Overripe berries are susceptible to fungi, insects, berry shrivel and berry shatter (Weaver, 1976).

2.11.2 Canopy management strategies

The vigorous nature of *Vitis vinifera* varieties will cause lower fruit fertility if canopy management strategies are not performed. Excessive foliage decreases fruit fertility (Pongrácz, 1978), maturity and quality (Jackson, 2014). Winter pruning encourages the growth of a vine into a more favourable shape. While summer pruning attends the microclimate in the fruit bunch to improve fruit quality. The various pruning practices are discussed in depth below.

2.11.2.1 Winter prune

The foundation of yield and fruit quality is based on pruning (Hoekstra Fruit Farm, 2017; Perold, 1926; Pongrácz, 1978). Pruning is the removal of unwanted and redundant canes[44] to encourage the

[44] Pruning removes 85-90% of vigour to prevent overcropping (Jackson, 2014). Two-year old short bearers are retained, which are shortened and replaced with water sprouts a few years later (Pongrácz, 1978).

development of the shoot- and root system (Hawkins, 1996). More importantly, pruning regulates yield, grape quality, vine shape[45] and concentrates the vine activities on the bearing wood to ensure the vines full fruit capacity is reached (Jackson, 2014; Moser, 1966; Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962; Winkler *et al.*, 1974; Zabadal, 2002). Even more, pruning is important for disease management such as Downy Mildew (DAFF, 2012) and Botrytis cinerea[46] (Gubler *et al.*, 1987). Unpruned vines become exhausted in the subsequent years as nutrient reserves diminish in old trunks, thus inflorescence initiation, fruit capacity and quality deteriorate (Jackson, 2014; Perold, 1926; Zabadal, 2002).

2.11.2.1.1 The timing of pruning

Pruning determines the timing of bud break, flowering and fruit set (Jackson, 2014). Early pruning encourages early bud break which is desirable in warm climate regions[47] (Jackson, 2014). Late pruning has several advantages. Bud break commences at a later stage, therefore, flowering occurs in warm favourable conditions (Friend & Trought, 2007). Subsequently, delayed berry maturity increases acidity, improves colour and amplifies berry flavour (Jackson, 2014). However, translocation of sugars from leaves to fruit is limited which could reduce yield (Jackson, 2014).

The timing and extent of winter pruning is based on soil, climate (Jackson, 2014), varietal characteristics (Jackson, 2014; Perold, 1926), a vines health, size, age and vigour performance from previous years (Jackson, 2014; Pongrácz, 1978; Winkler, 1962). Generally, pruning is performed after leaf fall (Jackson, 2014; Pongrácz, 1978) when bleeding starts (Perold, 1926). In the Western Cape, the first vines are typically pruned at the beginning of August (Pongrácz, 1978). However, Zabadal (2002) recommends pruning vines after bud break in spring to identify the strong growing buds. While Perold (1926) recommends pruning vigorous varieties with low bearing fruit later compared to vigorous varieties with berries that set well. Varieties that are vigorous and fertile but berry set is poor should be pruned at an even later stage (Perold, 1926). In regions where frost[48] possess a threat more buds and canes should be retained to compensate for bud loss (Jackson, 2014). Bud break should be delayed by performing a delayed pruning to limit frost damage (Jackson, 2014; Perold, 1926). Thereafter, canes should be removed if no frost occurs to ensure growth from spurs is not affected (Jackson, 2014).

[45] Vine shape influences work efficiency.
[46] Gubler et al. (1987) reported shoot removal reduced Botrytis cinerea incidences by 3,1% to 6%.
[47] Early bud break maximises the time period for carbohydrate production, while less vigour minimises the competition between leaves and grape bunches during berry development (Jackson, 2014). The earliest vines can be pruned is when phloem has sealed off in winter to avoid nutrient loss and the activation of dormant buds during winter dormancy (Jackson, 2014).
[48] Frost damages buds, emerging shoots, and inflorescence.

2.11.2.1.2 Pruning severity

Jackson (2014) argues, vineyard cultural practices should not be based on the desired yield but rather on the optimal canopy size required to mature the desired fruit capacity. The number of bunches a vine can mature (fruit capacity) is dependent on the vigour (Moser, 1966; Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962). Vines with excessive vigour have less fruitful eyes (Moser, 1966; Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962). Therefore, more fruit eyes should be retained if vines have abnormally vigour (Winkler *et al.*, 1974)[49]. While, a weak vine should be pruned more extensively to divert more energy from crop production into growth (Jackson, 2014; Winkler, 1962). Excessive pruning initiates lateral shoot development, which redirects nutrients to shoot growth rather than fruit development (Jackson, 2014). Excessive vigour decreases the LA/F ratio (Myers, Wolpert & Howell, 2008), therefore, increases shading, disease susceptibility and reduces yield, fruit quality, fruit maturity and causes uniformity at harvest (Jackson, 2014). Winkler et al. (1974) argues, pruning should be kept to a minimum as pruning reduces the stored nutrients in the canes**.** Minimal pruning is practiced in certain parts of Australia (Potgieter, 2020). Minimal pruning involves a light mechanical pruning operation in winter followed with a summer trim (Jackson, 2014). A vine is prone to overcrop[50], however, certain varieties self-regulate[51] (Clingeleffer, 2016) with shoot abscission on immature shoots in autumn and by producing fewer buds in the following years (Jackson, 2014). However, the phenomenon is unestablished for most varieties and climatic conditions (Jackson, 2014). Deep fertile soils increase vigour growth, therefore, only a moderate pruning is performed to restrict shoot growth during fruit ripening (Jackson, 2014). While vines in poor soils should be severely pruned to ensure the nutrients are translocated to the remaining buds to increase inflorescence initiation and fruit maturity (Jackson, 2014).

The selection of the best canes to retain is important, especially in cold temperatures to ensure a more fruitful yield and to minimise canopy management costs (Jackson, 2014). Mature canes[52] produce healthier buds that are more resistant to winter injury (Jackson, 2014)**,** therefore, mature canes should be selected as bearers (Moser, 1966; Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962). The appropriate number of buds to retain is critical as maturity is severely influenced[53]. The number of buds per cane should be within the canes fruitful capacity (Jackson, 2014; Winkler *et al.*, 1974). Vines with an average vigour produce approximately 25 canes with 30 buds on each cane and 750 buds in total per vine

[49] Retaining more fruit eyes will increase yield and vigour (Vogt & Gotz, 1977). Although, if more bunches are produced than the vines capacity the vine and fruit quality will deteriorate (Pongrácz, 1978).
[50] Overcropping reduces fruit quality, increases berry shatter and reduces the ripening rate (Winkler *et al.*, 1974).
[51] Minimal pruning can be performed on Sultana vines cultivated in a warm climate an appropriate amount of irrigation (Clingeleffer, 2016).
[52] Mature cane have a brown bark (Jackson, 2014).
[53] Although bud counting is easier on bare vines, the vines capacity cannot be accurately predicted during winter pruning and the actual fruitfulness can only be determined in spring (Jackson, 2014).

(Jackson, 2014). While unpruned vines only produce 100-150 buds that burst in spring which have a lower fruit maturity level (Jackson, 2014). According to Jackson (2014), the number of buds to retain is equiv. to the expected bunches per vine divided by the number of shoots or equiv. to the prune cuttings from the previous year, known as balance pruning. Under Australian conditions, one kilogram of cuttings is equiv. to 30-40 buds for Vitis *vinifera* varieties (Tassie & Freeman, 1992). An alternative measurement to determine the number of buds to retain per vine can be based on the row spacing. With a 3m row spacing, 20 buds are retained for severely pruned vines, 20-70 buds for moderate pruned vines and 75 buds or more for light pruned vines (Tassie & Freeman, 1992).

2.11.2.1.3 Pruning Methods

According to DAFF (2012) and Pongrácz (1978) there are two types of pruning methods, short and half-long cane pruning. The different pruning methods have an effect on fruit quality (Holt, Francis, Field, Herderich & Iland, 2008). Therefore, the following varietal characteristics should be considered when deciding on a method; the position of bud fertility[54], bunches per shoot, flowers per cluster, berry weight (Jackson, 2014) and the distance of internodes[55].

2.11.2.1.3.1 Short pruning (spur pruning)

Vitis vinifera varieties with fruitful eyes at the base of the cane, which produces large bunches are spur pruned to retain two good fruitful eyes (Pongrácz, 1978)[56] on each lateral shoot (DAFF, 2012). Jackson (2014) proposes to retain spurs with a 12 cm spacing between one another to prevent- crowding and fruit crowding. The variation in spur length is similar for manual and mechanical spur pruned vines (Intrieri & Poni, 1995). Variations typically occur due to the cut angle, irregular terrain and the cordon shape (Jackson, 2014).

Mechanical pruning is well adapted to cordon-trained, spur pruned vines. The mechanical pruner removes all shoots around the cordon. Table grapes in Australia are typically mechanically pruned (Potgieter, 2020). Mechanical pruning can reduce pruning time with 70-80% and cost with 40-50% (Jackson, 2014). Mechanical pruners typically spur prune vines along the cordon but have advanced with artificial intelligence to cane pruning (Jackson, 2014) and more fine pruning practices (Smith, 2009). However, canes need to be tied manually before mechanical pruning can commence (Jackson,

[54] Bud fertility is higher for buds positioned further from the base of the cane (Moser, 1966; Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962).
[55] Canes with short internodes have more fertile eyes compared to canes with long internodes (Moser, 1966; Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962)
[56] Spur pruning limits the growth of apical dominant varieties(Jackson, 2014). Apical dominant varieties have a low bud break at the base and middle section of the cane (Jackson, 2014). Apical dominancy can be reduced by bending long bearing canes downward, which will balance the bud break and shoot growth on the cane (Hillebrand, 1957; Jackson, 2014; Perold, 1926; Vogt & Gotz, 1977).

2014). More buds are retained from mechanical pruning, however, the vine self-regulates by producing more uniform vines with more bunches that are smaller in size (Jackson, 2014).

2.11.2.1.3.2 Half-long or long pruning

The half-long or long pruning system was developed in 1858 by Dr J. Guyot to accommodate varieties with no fruitful eyes at the base of the cane (Pongrácz, 1978), e.g. THS (Jackson, 2014). The half-long or long pruning system is referred to as cane pruning in California (Pongrácz, 1978). Cane pruning is less severe than spur pruning, therefore, vines grow more vigorously (Winkler, 1962). The Guyot pruning system includes half-long and long bearing canes to produced grapes in the current year and at least one additional short pruned cane, which is a classified as a renewal spur to produce canes for the following year (Pongrácz, 1978). The renewal spurs are critical as long bearers become unfruitful as the basal bud, therefore cannot serve as new bearers (Pongrácz, 1978). If the growth of a renewal spur is unsuccessful, the bottom spur from an old cane should be used for producing a new cane (Perold, 1926; Vogt & Gotz, 1977; Winkler, 1962). Old bearers are entirely removed in the fourth year, while the old renewal spurs are cut back to 8-10 yeas and the canes arising from the lower eyes are cut back to two eyes to bear as the renewal spurs (Pongrácz, 1978).

2.11.2.2 Summer prune

Yield is directly influenced by the microclimate within the leaf canopy. The microclimate must be amended to ensure the optimal crop production capacity is obtained (Winkler *et al.*, 1974). There are several summer treatments such as suckering, shoot thinning[57], pinching, trimming, (Jackson, 2014) cluster thinning, cluster loosening and basal leaf removal to amend the microclimate (Weaver, 1976; Winkler, 1962).

2.11.2.2.1 Suckering

Suckering is the manual removal of unwanted shoots on the vine trunk[58] (Pongrácz, 1978). Suckers that frequently grow is a sign of excessive winter pruning and as a result, nutrients are redirected to shoot growth rather than fruit production (Jackson, 2014). Suckers in favourable conditions produce nutrients for fruit development (Jackson, 2014) and if conditions are unfavourable nutrients are diverted to promote shoot growth rather than fruit development (Pongrácz, 1978). Although suckers are undesirable, the bud can act as a renewal spur to maintain the vine shape (Jackson, 2014).

[57] Summer shoot thinning is the removal of full shoot, which is insignificant if vineyard growth is in balance (Jackson, 2014).
[58] The removal of unwanted shoots from the cordon is known as “crown suckering” (Pongrácz, 1978).

2.11.2.2.2 Pinching

Pinching is the removal of the top few centimetres of a shoot early in the season (Jackson, 2014). Pinching reduces carbohydrate competition between leaves and developing fruit (Jackson, 2014). Therefore, pinching performed during flowering improves fruit set (Collins & Dry, 2006) and reduces inflorescence necrosis (Jackson, 2014). Pinching is favourable in warm climates as lateral shoot growth is activated, therefore shading is increased (Jackson, 2014).

2.11.2.2.3 Trimming shoots

Partial shoot removal is known as trimming, while other more excessive shoot removal practices are known as pinching, tipping, topping or hedging (Jackson, 2014). Trimming is generally kept to a minimum and performed periodically in order to be less physiologically disruptive(Jackson, 2014). However, the extent of trimming is based on varietal characteristics and the training system (Intrieri & Poni, 1995). Trimming shoots to less than 15 leaves per shoot initiates lateral bud activation (Jackson, 2014). Although, trimming performed after véraison rarely stimulates lateral shoot growth, the reduced photosynthetic vine activity could reduce cane maturity (Jackson, 2014). The benefits imposed by trimming is similar to basal leaf removal, which are discussed on pg.#.

2.11.2.2.3.1 Tipping shoots

Tipping is the periodical removal of the shoot tip and undesirable leaf cover in the growing season, leaving at least fifteen mature leaves per shoot (Jackson, 2014). Competition for carbohydrates between young leaves and developing flowers or fruits is reduced when shoots are tipped (Hunter & Ruffner, 2001). Tipping improves the microclimate in the canopy and produces short sturdy and upright shoots that are more resistant against strong winds (Jackson, 2014). However, tipping reduces the weight of pruned cuttings, number of shoots and grape cluster in the following year (Vasconcelos & Castagnoli, 2000), which should be considered when the vines potential vigour is determined.

2.11.2.2.3.2 Hedging or topping

Hedging or topping is the removal of the apical meristem of a growing shoot (Pongrácz, 1978) to trim vine canopies into a hedge shape to ensure vigour does not impede machinery movement in rows (Jackson, 2014). Hedging is critical in narrow vineyard rows to increase airflow and sunlight exposure in the vineyard canopy (Jackson, 2014). Hedging performed at the end of bloom increases lateral shoot growth (Gubler *et al.*, 1987) and improves berry set (Pongrácz, 1978) as the competition is reduced between leaves and developing fruit (Jackson, 2014). Although hedging can stimulate lateral shoot growth (Jackson, 2014), young shoots grow stronger and are able to withstand strong winds (Pongrácz, 1978). However, according to Gubler et al. (1987) and Savage et al. (1984), hedging delays fruit maturity and has a minor reduction effect on Botrytis infection.

2.11.2.2.4 Thinning flower clusters

Cluster thinning is the removal of an entire cluster from the vine (Winkler, 1931) to prevent overcropping[59], improve berry size, berry weight, berry colour, fruit composition (Dokoozlian & Hirschfelt, 1995; Hamilton, 1953; Harmon & Snyder, 1944; Kliewer & Weaver, 1971; Sharples, 1955; Weaver, 1952; Weaver & Pool, 1973; Winkler, 1962, 1953), crop capacity, leaf area/fruit balance (Jackson, 2014), and to reduces water loss (Lo'ay, 2011) and bunch rot incidences (Reynolds, Pool & Mattick, 1986). The extent of cluster thinning should be determined by weighing the loss in yield against potential benefits (Jackson, 2014). Fruit cluster thinning should be considered for varieties that are prone to produce abundant flowers (Bavaresco, Zamboni & Corazzina, 1991). An accurate yield estimate is critical when fruit cluster thinning is considered. Yield estimate could be based on statistics (Tarter & Keuter, 2008) and various methods of vigour control such as pruning and shoot thinning (Jackson, 2014).

The timing of cluster thinning influences berry growth, fruit composition and colour development (Dokoozlian & Hirschfelt, 1995; Kliewer & Weaver, 1971; Sharples, 1955). The general rule is that table grapes should be thinned from fruit set (Weaver & Pool, 1973; Wicks, Kliewer & Jensen, 1980) and before fruit softening (Dokoozlian & Hirschfelt, 1995) to obtain optimum fruit composition and berry size. The window provides an opportunity to identify healthy-looking bunches to eliminate unattractive bunches. Cluster thinning should not be performed for early or mid-season table grapes after fruit softening (Dokoozlian & Hirschfelt, 1995).

Numerous studies determined the ideal window to perform cluster thinning by evaluating the effect on fruit composition, berry weight, colour and size. The different windows evaluated to conduct cluster thinning were during pre-bloom (PB), berry set (BS), two weeks after berry set (BS+2), 4 weeks after berry set (BS+4) i.e. berry softening and lastly, 6 weeks after berry set (BS+6). Weaver and Pool (1952) achieved the maximum increase in berry size when cluster thinning was performed on Thompson Seedless (THS) during fruit set. Berry size was 10% larger compared to vineyards thinned during BS+2 and 25% larger compared to vineyards thinned during BS+4. However, other studies found conflicting results. Dokoozlian and Hirschfelt (1995) and Winkler (1931) reported similar results are obtained regardless of the timing cluster thinning is performed. Dokoozlian and Hirschfelt (1995) reported fruit composition and berry weight were similar among the vines thinned during PB and BS+4 after reducing crop load by one-third for Flame Seedless. Winkler (1931) removed 50% of THS bunches and reported no significant difference between cluster thinning during berry set and three weeks after berry set.

[59] Overcrop vines have too many bunches to mature

Studies reported contradicting results whether berry weigh is significantly influenced by an increase in SSC. Dokoozlian and Hirschfelt (1995) reported cluster thinning performed during PB and BS+4 increased berry weight with 11% and increased SSC with 6%. While, Harmon and Snyder (1944) reduced the crop load with 75% on eight different table grape varieties and reported no significant increase in soluble solids, however only a slight increase in berry weight. Furthermore, Sharples (1955) reported a 60% crop load reduction in Cardinal table grapes increased SSC by 5%, however, recorded no consistent increase in berry weight. Although Kliewer and Weaver (1971) reported a far smaller crop load reduction of 40% on Flame Tokay increased berry SSC, weight and berry colour with 21%, 17%, and 57%, respectively.

Dokoozlian and Hirschfelt (1995) and Kliewer and Weaver (1971) reported berry colour is the most sensitive fruit characteristic influenced by crop load reduction. The two-year average results recorded by Dokoozlian and Hirschfelt (1995) showed, 30% of unthinned vines and 7% of thinned vines had inadequate colour and where therefore unpackable. Furthermore, skin colour pigments were 50% better for vines thinned during berry BS. The packable fruit yield for vines thinned at BS+6 was lower than vines thinned between PB and BS+4. Cluster thinning performed later, during BS+6, resulted in a heavier crop load, which delayed colour veraison permanently (Dokoozlian & Hirschfelt, 1995).

2.11.2.2.5 Cluster loosening

Cluster tightness significantly influences fruit quality and marketable appearance. Compact bunches have a higher water content level compared to loose bunches (Lo'ay, 2011), therefore, suffer less from water loss. Zhou et al. (2015) and Wang et al. (2017) articulated, less rachis exposure increases marketable appearance. Furthermore, cluster tightness is an important variable to the susceptibility of bunch rot (Vail & Marois, 1991). Vail and Marois (1991) determined the susceptibility of individual berries to Botrytis cinerea and water loss within seven different cluster densities. Vail and Marois (1991) reported berries with a high susceptibility to bunch rot with a low cluster tightness were only slightly infected, while tight cluster with berries with low susceptible to bunch rot was severely infected. Therefore, the severity of Botrytis bunch rot infection is correlated to cluster tightness and not to the susceptibility of individual berries to infection. Tight clusters are more prone to Botrytis bunch rot infection (Gubler *et al.*, 1987; Savage, 1984; Vail & Marois, 1991). Compact cluster have the tendency to increase berry shatter (Zoffoli *et al.*, 2008: 190) and more berries touch and rub against one another, reducing the deposition of cuticle and epicuticular wax (Marois *et al.*, 1986). Consequently, the injured berry surface is more susceptible to Botrytis bunch rot.

2.11.2.2.6 Basal leaf removal

An alternative to cluster thinning is pre-defoliation (Poni, Bernizzoni, Civardi & Libelli, 2009; Poni, Casalini, Bernizzoni, Civardi & Intrieri, 2006). Basal leaf removal is the removal of leaves above, below, around and opposite the fruit bunch on the vertical shoot (Jackson, 2014). The removal of basal leaves amends the microclimate within the vineyard canopy (English, 1989; English, Bledsoe, Marois & Kliewer, 1990). Basal leaves are the primary exporter of carbohydrates to flowers clusters during fruit set as translocation from other vine organs have ceased in this phenological stage (Jackson, 2014). Thus, leaves play a critical role in fruit and cane ripening, therefore, leaves should be kept on the vines for as long as possible (Kövesssi, 1901; Perold, 1926). Once basal leaves are removed, the photosynthetic efficiency of the remaining leaves are enhanced and more leaves are produced on the lateral shoots (Candolfi-Vasconcelos & Koblet, 1991).

Leaf removal reduces friction between leaves and berries, increases light exposure, aeration, spray penetration (Jackson, 2014; Van Der Merwe, 2019; Perold, 1926; Vogt & Gotz, 1977), reduces susceptibility to infection (English, 1989; Gubler *et al.*, 1987) increases wind speeds and temperatures in the bunch microclimate (Thomas, Marois & English, 1988). Therefore, leaf removal is the most effective canopy management treatment to control Botrytis infection (Gubler *et al.*, 1987; Pongrácz, 1978). The subsequential affects from basal leaf removal, similar to trimming, is a decline in titratable fruit acidity, which is reflected with a reduction in potassium[60] uptake and enhanced malic acid degradation (Jackson, 2014). Tartaric acids, citric acid, fruit aromas and, berry sugar are seldom affected (Jackson, 2014). Leaf removal could expose bunches to excessive sunlight and cause sunburn[61], delay maturity and reduce fruit quality (Greer, Rogiers & Steel, 2006).

Although basal leaf removal is typically performed after flowering and before véraison (Jackson, 2014), the extent and timing of basal leaf removal should be determined by the cost-benefit ratio (Jackson, 2014). Leaf removal is unnecessary if the vine canopy is open and bunches are exposed to adequate light (Jackson, 2014). While, Leaf removal during pre-bloom reduce disease vulnerability as pathogens are still dormant (Holz *et al.*, 2003). Although, English (1989) and Gubler et al. (1987) reported incidences and severity of bunch rot infection were reduced when basal leaves were removed two to four weeks after berry set. The consequence of early leaf removal during bloom reduces inflorescence initiation, increases inflorescence necrosis (Candolfi-Vasconcelos & Koblet, 1991) and promotes flower abscission (Lohitnavy, Bastian & Collins, 2010). Leaf removal before flowering reduces berry

[60] Similar to nitrogen, potassium plays an important role in biological functions in the leaves and is essential for plant growth.
[61] Sunburn damage is the discolouration of fruit bunches due to intense sunlight or heat spikes in cooler regions. Grape colour turns brown and berry shatter and shrivelling appear. Fruit bunches are vulnerable after veraison when berries start to soften (Greer *et al.*, 2006).

size (Kingston & Van Epenhuijsen, 1989). However, Van Der Merwe (2019) articulates, leaf removal before flowering leads to better bunch set. Vasconcelos & Castagnoli (2000) articulates once leaves have matured, basal leaf removal at the initial stage of fruit development does not significantly affect fruit set. While, removing basal leaves after véraison reduces sugar accumulation (Iacono, Bertamini, Scienza & Coombe, 1995).

2.11.3 Growth hormone regulators

The grape bunches configuration and berry size are improved with plant growth regulators (GPR)(Gupta & Chakrabarty, 2013; Reynolds, Wardle, Zurowski & Looney, 1992; Roberts, 1988). The three main GPR are girdling, gibberellic acid (GA_3) and cytokinin (CPPU). All three GPR increase berry size. CPPU and girdling (Höxtermann, 1994) induce berry growth through cell division, while GA_3 promotes berry enlarge through cell elongation (Roberts, 1988). Another noteworthy difference, GA_3 promotes berry shatter, while girdling and CPPU prevent berry shatter. Therefore, the selected GPR should be based on the grape variety[62] and phenological stage to increase yield, improve bunch quality and reduce the labour hours required for cluster loosening[63].

2.11.3.1 Girdling

Girdling, also known as ringbarking, is the removal of a bark strip from the vine with is a single circular cut to improve fruit set, berry size and fertility in the following season (Van Der Merwe, 2019). The cut restricts the movement of sucrose from the canopy down to the roots[64] (Dokoozlian, Luvisi, Moriyama & Schrader, 1995; Hunter & Ruffner, 2001). Although the timing of girdling is variety sensitive (Van Der Merwe, 2019). Numerous studies have reported girdling should be applied near fruit set to increase berry size, total fruit load (Bianchi, Jensen & Moriyama, 1990; Weaver, 1952; Winkler, 1953) and berry firmness[65] (Dokoozlian *et al.*, 1995). Girdling induced at fruit softening delays fruit maturity and increases titratable acidity (Dokoozlian *et al.*, 1995). However, SSC is much higher for ungirdled vines compared to vines girdled at fruit set or fruit softening (Dokoozlian *et al.*, 1995).

2.11.3.2 Gibberellic acid

Gibberellic acid (GA_3) is applied during flowering and berry set as a cluster-loosening effect (Van Der Merwe, 2019; Zabadal, 2002) due to the formation of the abscission layer at the berry pedicel-end

[62] Van der Merwe (Van Der Merwe, 2019) recommend to avoid the use of GA_3 and CPPU on RGT as the growth regulators have a negative physiological effect on RGT an increases skin browning.

[63] Another factor to consider is the effect of GPR under net. The application of GA_3 and CPPU is more effective under nets, therefore GA_3 application should be reduced with 30% (Van Der Merwe, 2019).

[64] The metabolic activity is referred to as *phloem diffusates* in plant physiology (Höxtermann, 1994). In 1921, Höxtermann (1994) found that cell division induced by plant wounds is prevented when the wound is rinsed and is promoted when crashed plant tissue is added to the wound.

[65] Berries of vines girdled at fruit set were much firmer and the berry weight increased with 38%, furthermore, the berry diameter and berry length increased with 10% and 12%, respectively, compared to ungirdled vines (Dokoozlian *et al.*, 1995).

(see **Error! Reference source not found.**) (Dhillon, Ladania, Bhullar & Randhawa, 1985) and an increase in rachis thickness (Ben-Arie, Sarig, Cohen-Ahdut, Zutkhi, Sonego, Kapulonov & Lisker, 1998; Zoffoli *et al.*, 2008), which reduces flexibility in the rachis (Retamales & Cooper, 1993: 82). The less flexible and heavier rachis is prone to break out of the abscission zone. Berry shatter is less severe for clusters treated with GA_3 during flower (Fruit & Pal, 1974: 219). The extreme physiological effect on the berry encourages several problems. Bianchi (1990) reported GA_3 increases berry weight of FMS with 40% when applied during fruit set, however, reduces the packable yield with 30% due to inadequate colour. The increase in berry size and crop load delays fruit maturation (Dokoozlian & Hirschfelt, 1995). High berry shatter incidences increase susceptibility to Botrytis cinerea and hairline fractures (Zoffoli *et al.*, 2008) due to a reduction in skin and cell thickness (Ben-Arie *et al.*, 1998). The excessive use of GA_3 reduces shelf life due to deficiency of epicuticular wax on berries (Zoffoli *et al.*, 2008). To prevent severe defects. GA_3 should be applied once or twice (Zabadal, 2002). Under Chilean conditions, only two GA_3 applications are recommended on THS (Pérez-Harvey, 1994) and no more than three under South African conditions (Greyling, 2007). Van Der Merwe (2019) articulates, only THS and Flame Seedless can sustain a full leaf-spray program, while other varieties can suffer from unfertile or small berries in the following season, therefore, bunches should rather be dipped in GA_3. The sensitivity of bud mortality is emphasised with the findings from Collins and Rawnsley (2004) who reported bud mortality for THS is significantly increased in the following season if GA_3 is overused.

2.11.3.3 Cytokinin

Forchlorfenuron (CPPU) [66] is a synthetic cytokinin that was introduced to the table grape industry as a substitute for GA_3 (Reynolds *et al.*, 1992). CPPU is used to increase berry size, cluster weight (Reynolds et al., 1992: 89; Zoffoli et al., 2008) and cuticle content (Zoffoli et al., 2008). CPPU stimulates periclinal cell division and cell expansion (Reynolds et al., 1992: 88), therefore, grapes become more round or oval shape (Retamales, Bangerth, Cooper & Callejas, 1995: 149; Zoffoli et al., 2008: 184) and skin thickness increases (Ben-Arie *et al.*, 1998). Furthermore, CPPU increases berry pedicel and rachis thickness, thus berries are firmly attached and less prone to postharvest shatter (Ben-Arie *et al.*, 1998; Zoffoli *et al.*, 2008). Nickell (1985) reported that a CPPU cluster spray program on THS was only 60% as effective as cluster dip programs and later-on corresponding results were obtained for Flame Seedless (Nickell, 1986a) and Perlette (Nickell, 1986b).

[66] CPPU is one of few substances with strong cytokinin-like activity (Reynolds *et al.*, 1992), which is accepted by the Environmental Protection Agency in USA (EPA, 2003) to be used on crops, due to a low "mammalian toxicity" level (Ben-Arie et al., 1998).

2.11.3.4 Combination treatment

Retamales et al. (1995) measured the different effects GA_3 and CPPU treatments have individually (GA_3 or CPPU) and in combination (GA_3+CPPU) on table grapes. The results indicated berry shatter is the highest for GA_3 treatment, lowest for CPPU treatment and second-highest for the combined treatment (Retamales *et al.*, 1995: 155), therefore it can be concluded that GA_3 promotes berry shatter. Furthermore, the increase in berry weight and diameter was the highest for the combined treatment. Zoffoli et al. (2008) reported that excessive use of a GA_3 and CPPU treatment (8xGA_3+CPPU) on THS, Red Globe (RGB) and Ruby Seedless increases pedicel thickness and berry firmness. The largest THS berries were obtained by applying GA_3 several times or by applying CPPU after the recommended 2xGA_3 application. However, both application programs increased hairline fractures by three times (Zoffoli *et al.*, 2007). Bianchi et al. (1990) recorded that GA_3 treatment near berry set significantly reduces the colour of Flame Seedless (Bianchi *et al.*, 1990), while, Retamales et al. (1995) reported CPPU did not have such a severe influences on colour development with THS compared to GA_3.

2.11.3.5 Colour hormone regulators

The essence of véraison is ethylene[67]. Ethylene plays a role in numerous plant development stages such as germination, berry growth (Chervin, Tira-Umphon, Chatelet, Jauneau, Boss & Tesniere, 2009) and véraison[68] (Roberts, 1988). Véraison is triggered when ethylene levels increase due to an increase in phytohormones[69], also known as abscisic acid (ABA) (Gagné, Esteve, Deytieux-Belleau, Saucier & Geny, 2006; Hale, 1974), and anthocyanin production[70] (Chervin *et al.*, 2009; Coombe & Hale, 1973). ABA is naturally produced in the leaves in low concentrations (Deytieux-Belleau, Gagné, L'Hyvernay, Donèche & Geny, 2007) and transported to the bunches (Antolín, Baigorri, Luis, Aguirrezábal, Geny, Broquedis & Sánchez-Díaz, 2003; Shiozaki, Kamata, Ogata, Horiuchi & Kawase, 1999). Unfortunately, the increase in ethylene expands skin cells and promotes the formation of the abscission layer (Ge, Zhang, Chen & Ye, 1997), therefore increases berry shatter severity especially for hot berries (Ge *et al.*, 1997).

Table grapes producers use ethephon to enhance véraison (Cantín, Fidelibus & Crisosto, 2007). Both colour regulators contain synthetic abscisic acid (S-ABA). S-ABA can be applied to grapes from veraison

[67] Ethylene regulates fruit ripening in tomatoes, avocados (Roberts, 1988), bananas and several other fruits.
[68] In 1864, Girardin was the first chemist to observe how a leaking illuminating gas substance promotes leaf abscission (Roberts, 1988). Similar findings were observed by Molisch in 1884 and by Neljubow in 1901 (Roberts, 1988). Only in 1934 the gas was identified to be ethylene by Gane (Roberts, 1988).
[69] phytohormone improves plant stress tolerance (Zhang, Jia, Yang & Ismail, 2006), regulates photosynthesis in the leaves, plays a role is seed dormancy (Zeevaart & Creelman, 1988) and increases sugar levels (Hiratsuka *et al.*, 2001; Kataoka, 1982; Lacampagne, Gagné & Gény, 2010).
[70] At the start of veraison *anthocyanins, water-soluble vacuolar pigments* in the berry, start to accumulate, which triggers colour change in red pigment (red, purple, violet, scarlet) grapes (Fritts & Retamales, 2017; Gagné, Cluzet, Mérillon & Gény, 2011).

throughout harvest (Fritts & Retamales, 2017). Red-pigment grapes are typically treated with S-ABA, at the start of fruit ripening to exhilarate véraison (Dokoozlian et al., 1995; Van Der Merwe, 2019). Van Der Merwe (2019) articulates, varieties harvested early in the season should be sprayed as soon as véraison starts, while late varieties should be sprayed only once colouring is about 5%. The application of S-ABA on clusters increases anthocyanin production levels in the berry skin (Hiratsuka, Onodera, Kawai, Kubo, Itoh & Wada, 2001; Peppi, Fidelibus & Dokoozlian, 2006), therefore, increases colour development[71] (Gagné et al., 2006; Peppi et al., 2006). Unlike ABA, S-ABA does not promote stem browning[72] or berry shatter (Cantín et al., 2007; Lo'ay, 2011). Unfortunately, S-ABA application results in chlorophyll loss (Deytieux-Belleau et al., 2007), berry softening (Peppi et al., 2006), a slight reduction in berry firmness (Dokoozlian et al., 1995) and does not influence berry weight and titratable acidity levels (Gagné et al., 2006; Peppi et al., 2006).

Varieties[73] react differently to S-ABA. The application of S-ABA on Flame Seedless (FMS), RGB (Cantín et al., 2007; 2006; Peppi, Fidelibus & Dokoozlian, 2007) and Crimson Seedless (CSS) improvs berry colour (Dokoozlian et al., 1995). The titratable acidity, SSC and berry shatter for FMS and RGB is unaffected by S-ABA application (Gagné et al., 2006; Peppi et al., 2007). S-ABA on FMS and RGB reduces berry weight (Peppi et al., 2007) and induces berry softening during long cold storage periods (Dokoozlian & Hirschfelt, 1995; Peppi et al., 2006, 2007). While, Cantín et al. (2007) reported after sixty days in cold storage no berry softening for CSS treated with ethephon was detected. Dokoozlian et al. (1995) reported ethephon treated to CSS vines girdled at fruit set and at fruit softening, improved the colour deficiency caused by the girdling and increased packable yield with 40% to 60%, respectively. Furthermore, ethephon increased packable yield for vines untreated with girdling with 14%.

[71] Cantín et al. (2007) reported CMS treated with S-ABA was harvested thirty days before untreated grapes and ten days before grapes treated with ethephon. Fritts and Retamales (2017) reported that ABA was applied to unharvest FMS grapes, due to insufficient colour development, and within ten days the colour was sufficient to comply with market standards.

[72] Lo'ay (2011) reported after a five day shelf life, stem browning was less severe when ABA was applied to THS vines 14 days prior harvest. Peppi et al (2006) reported after sixty days in cold storage, grapes treated with S-ABA showed less rachis browning and a better overall appearance than grapes treated with ethephon.

[73] Currently, ethephon is only registered to be used for Barlinka, however, is also used on Starlight, Flame Seedless, RGB, and CSS (Van Der Merwe, 2019).

2.12 Conclusion

The research question revolves around the identification of key factors to consider when making a planting decision in terms of table grapes. These factors are driven by the different phases of grape development and plant growth in general. Every phase requires unique intervention and management activities that all influence potential yield and quality of table grapes. The purpose of this chapter was to provide a thorough overview of the various phenological phases and what activities are required during each phase that directly impacts either vine productivity or grape bunch quality. Table grapes are classed according to various visual and taste characteristics. These characteristics are manipulated with canopy management strategies at various phenological stages to ensure a high-quality yield. It is important that some details are presented to serve as a point of reference for the importance of the activities during each phase. All of the activities will translate into costs in the following chapters. It is also noteworthy that these factors are often variety specific and time window specific depending on the variety. Therefore, the total farm operation time planning should consider the phenological stages that require work and not only the expected harvest date.

Chapter 3: Research method

3.1 Introduction

The aim of this research project is to identify and evaluate the important factors that should be considered when a table grape variety is selected. The challenge is that a producer is already in a fully operational production system and the selection of a new variety will impact labour, machinery usage, packing facilities and cash flow. To assess the variety, specific properties of the variety need to be considered within the farming system. In Chapter 3, the system theory and simulation modelling are briefly introduced. Thereafter, the objective of the study is related to the data collection method and process. The rest of the chapter discusses the four different aspects of the simulation model. First is the input model that refers to the data collected. Second is the initialisation model where data is configurated and quantified. Third is the simulation of the farm situation where the change in the variety portfolio is encoded into a sensitivity matrix. The results imposed by the change in the variety portfolio is expressed in enterprise budgets in the output model.

3.2 Farm Business systems

The constant change in the economic and physical environment conditions cause successful farm managers[74] to constantly rethink and evaluate decisions to ensure the best plan is selected (Shadbolt & Martin, 2005). With a system-theory approach, farm managers can conceptualise information to utilise resources, achieve goals (Shadbolt & Martin, 2005), make less risky investment decisions (Department, 2005) and improve management strategies (Csáki, 1985). Modern system thinking applications are bound to mathematical models (Jones & Street, 1990) and programmed into a computer to represent and experiment with scenarios in the real-world in an undisruptive, cost- and time-efficient manner (Csáki, 1985; Shadbolt & Martin, 2005; Wright, 1971). A model contains a substantial amount of information about historical, current and future events to provide a better understanding of the interactive variables over time (Shadbolt & Martin, 2005). The substantial information on each component provides a comprehensive description of a farm system. The descripted information in the model provides a platform to make managerial decisions regarding the complex relationships between components in the system (Shadbolt & Martin, 2005). The platform acts as a financial instrument to exploit the financial aspects alternative investment strategies hold for a Farm Business (Louw *et al.*, 2017).

[74] A farm manager must have the knowledge and skill set to make decisions, minimise risk, capture opportunities, increase productivity, production capacity and quality and reduce cost. (Shadbolt & Martin, 2005).

3.3 System simulation model

A system is a group of interrelated elements, also known as components, that interact with one another in order to perform a function (Shadbolt & Martin, 2005) within a specified boundary. The effect of the environment from outside the boundary on a Farm Business is unpredictable and brings uncertainty[75] (Dent, 1979). The mutually interrelated components (Csáki, 1985) have an influential effect on one another inside the boundary and little effect on the components outside the boundary (Shadbolt & Martin, 2005). The components inside the farm system boundary can be studied, therefore, the effect on the farm's financial outcome can be determined with credibility. Shadbolt and Martin (2005) states, system boundaries identify and determine the reason for the system and within the boundary is a hierarchical subsystem structure. The subsystems are classified according to the interrelationships between components (Csáki, 1985) to form a complex farm system organisation (Dent, 1979). There are various subsystems in an agricultural system, namely, biologic, physiologic, production, ecologic, enterprise, regional, national and global subsystem (Csáki, 1985). Therefore, an agriculture system is classified as a biological-economic system (Csáki, 1985).

Scientifically defined, simulation is an experiment to gather information regarding the relationships between components and the conditions in a real-world system (Dent, 1979). The accuracy of the results obtained from the simulation model depends on how accurate the model describes the real world (Csáki, 1985). The economic value of the interrelationships between components determines whether the event is feasible and cost-effective (Alston, Chalfant, Christian & Piggott, 1997). The economic significance of cost, yield and price-related variables are evaluated (Csáki, 1985) to determine the economic value of managerial decisions. The change in the outcome value over time is determined by taking known patterns and interactions into account to determine realistic values (Dent, 1979). The main components in system analysis are people, resources and money (Shadbolt & Martin, 2005).

Some system simulation models are deterministic in design in order to evaluate the effect variables have on the performance of the Farm Business (Shadbolt & Martin, 2005). Deterministic models simulate the entire managerial and production process to obtain a substantial amount of information to answer any possible questions (Csáki, 1985). In agricultural production models, there is a flow of information between economic and biological subsystems (Csáki, 1985).

[75] Uncertainty refers to the variance in gross farm return (GFR), which is directly affected by fluctuating yields, prices and input costs (Shadbolt & Martin, 2005).

Deterministic models can be used for management decisions. Management decisions are based on interconnected time horizons or spatial scales (Le Gal, Mérot, Moulin, Navarrete & Wery, 2010; Shadbolt & Martin, 2005) e.g. yearly strategic decisions, seasonal tactical decisions, daily or weekly operational decisions and vineyard blocks.

Dynamic simulation modelling is a suitable approach to introduce change to a farm system (Woodward, Romera, Beskow & Lovatt, 2008). Csáki (1985) states, all the production and financial factors of the various commodities in a farm system over a specified time period should be described in the model to account for biological and technical aspects. The approach is feasible, workable and useful for decision making (Anderson, 1972; Magee, 1966) and reinforces the process of learning. According to Shadbolt and Martin (2005), a model is a helpful tool aid to communicate the meaning and complexity of the farm system, to provide a comprehensive understanding of the farm system, understand the relationships between components[76] and to evaluate alternatives (Shadbolt & Martin, 2005).

It is important that the fundamental aspects of the real system are represented in the model. Model building is the "art of mimicry" (Mihram, 1972). The mimic behaviour of a real situation determines the degree and detail that should be incorporated in the model design. Dent (1979) classifies a symbolic model as a computer-based simulation model. Simulation does not refer to a specific type of model but rather to the application of a procedure, a method to explore problems or a type of approach to study a system (Csáki, 1985). On that account, the application of simulation models are problem-orientated and underpinned by a system approach (Csáki, 1985). A simulation model does not provide the optimum solution but rather a mathematical description of the situation to provide a possible analytical solution by investigating the interrelationships between components (Csáki, 1985). A model that can adapt to reality is more useful for decision-making than a model that determines the optimal solution which holds many uncertainties (Csáki, 1985).

3.4 Explorative research method

With a simulation model, real economic and production explorative studies within the table grape industry are studied to determine the effect various changes in a varietal portfolio will have on the financial state[77] of the Farm Business. According to Le Gal et al. (2011), hypothetical farms are typically

[76] McMichael (1993) made an noteworthy accusation based on world systems theory, if a system requires reconstruction, rather than component substitution, then the way the components are connected to form the relationship are problematic and not the components themselves.

[77] According to Anderson (1974), practitioners acknowledge simulation as a technique to conceptualise a system through a system approach. A system approach studies the interactive and interdependent components and sequential activities to conceptualize and model the whole system (Anderson, 1974). While a system analysis refers to analytic evaluation of the components and the interrelationship between systems (Csáki, 1985).

used in a farm system modelling approach to address farm problems as the participation of farmers are either non-existent or the information provided is limited regarding management practices and present farm problems. With an assessment or evaluation model, the state of nature is determined by the values and relationships of the inputs and outputs (Csáki, 1985) based on historical data[78], research and sources within the industry (Shadbolt & Martin, 2005). A dynamic aspect is programmed into the model to analyse the different component combinations to determine the expenditure and income of each variety.

3.5 Problem statement and research objective

The financial commitment to remove a vineyard block to replant a new variety comes with great uncertainty. The potential yield, price and royalty costs are mere speculation. The required labour and chemical hormone regulators can only be determined from previous records or other sources within the industry.

To investigate the uncertain variables for each variety, the study will develop a platform for farm managers to measure the change a new variety will impose on day-to-day operations and the financial farm situation. With the farm simulation model, a farm manager will be able to determine the required infield-work load for each vineyard block, along with the required chemical hormone regulators. The financial implication on day-to-day operation will be calculated by determining the necessary canopy management strategy for each variety and the time and cost to complete the tasks. The forthcoming financial effect of a new variety on a Farm Business over a fifteen-year period will be determined with a yield estimation based on the vines age and the harvest of the previous season. The financial income and royalty-bearing costs will be based on real data from the previous season.

The five variables will be calculated in the equiv. of a 4,5kg carton to measure the marginal effect of each variety on a Farm Business. Thereafter, in a farm simulation model, the internal rate of return (IRR) for different vineyard blocks will be calculated to measure the influential variables in the profitability criteria. An additional simulation of the weekly farm harvest will determine if the harvest schedule imposed by the new variety portfolio is manageable.

[78] In an analytic model, the performance information from previous years and similar farm types provide a better understanding about the Farm Business (Shadbolt & Martin, 2005).

3.6 Data and information collection

This study requires information and data to calculate five variables equiv. to 4,5kg cartons, namely, price, royalty cost, labour cost, chemical hormone cost and yield. After these variables have been quantified the profitability can be calculated for each variety by incorporating production and establishment costs. The data and information to calculate these variables were gathered from table grape producers, intellectual property (IP) owners, a fruit exporter, conferences, and literature.

The varieties evaluated in the study were identified from a data set provided by a fruit exported (Star South, 2020). The data set originally consisted of 9200 export shipment invoices, which was reduced to 508 unique export shipments after investigating the various varieties, harvest dates, berry size, packaging material, markets, and arrival markets (see annexure 7.2**Error! Reference source not found.**). The export shipments relevant to the Berg River study area were identified by comparing the harvest date of each invoice with the harvest window of the different varieties expressed by Ferreira (2020). Hence, the data set was further reduced to 280 export shipments, which contained seventeen table grape varieties, namely, Thompson Seedless (THS), Red Globe (RGB), Tawny Seedless® (TAW), Prime Seedless® (PSE), Autumn Royal (ATR), Dan Ben Hannah (DBH), Crimson Seedless (CSS), Midnight Beauty® (SGT), Allison® (ALI), Sweet Globe® (I10), Sweet Celebration® (I75), Autumn Crisp® (S35), Scarlotta™ (SGE), Adora Seedless™ (S34), Sweet Joy® (I17), Starlight® (STL) and Regal Seedless (RGT).

The different canopy management strategies, also known as technical management routes (TMRs), required during the various phenological stages to cultivate export quality table grapes were consolidated with literature for each variety. The information for the TMRs for each variety is obtained from the book, "*Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer*" (2019) and other cultivation guideline booklets (IFG, 2020; Snfl Group, 2019). The time required to perform the various TOs on each variety is attained from a raw data sheet provided by ARC (2020) and a table grape cultivation schedule of a specific farmer (Van Der Merwe, 2020). The chemical hormone cost of the TOs is based on discussions with farmers in the Berg River region. Other production and establishment costs were obtained from the book, *Statistics of Table Grapes in South Africa"* (Ferreira, 2020).

The yield for each variety is mathematically calculated with a method proposed by Van Der Merwe (2019). While the price per variety is based on the data provided by the exporter. Both yield and price is attuned with the production performance of the various varieties based on the discussion at the Berg River table grape Production Performance Symposium (Van der Merwe, 2020). The royalty cost of each variety is calculated from the various incoterms calculated in the data provided by the exported. According to discussion with various IP owners, the IP bearing varieties require a royalty fee, which is equiv. to 5% of the FOB price or ex-works price.

3.6.1 Description of varieties

The study evaluates seventeen different table grape varieties cultivated in the Berg River region, which are presented in Table 3.2. Table 3.2 indicates to which generic varietal group the variety belongs to, the abbreviation and full name of each variety, the patent holder, production royalties, bunch weight and the number of bunches per square meter for each variety.

The generic table grape groups evaluated in the study are black seedless (BS), white seedless (WS), Red seedless (RS), black seeded (BG) and red seeded (RG). Within Table 3.2, there are six varieties that are not registered to IP-owners and eleven royalty-bearing varieties. The following varieties are not registered to IP owners; Autumn Royal (ATR), Crimson Seedless (CSS), Dan Ben Hannah (DBH), Red Globe (RGB), Thompson Seedless (THS) and Regal Seedless (RGT). The two varieties registered to Hoekstra Farms are Prime Seedless® (PSE) and Starlight (STL). The three varieties registered to Sun World are Midnight Beauty® (SGT), Autumn Crisp® (S35) and Adora Seedless™ (S34). While, Sweet Globe® (I10), Sweet Celebration® (I75) and Sweet Joy® (I17) are registered to IFG and the remaining variety, Tawny Seedless (TAW), is registered to Lombardi genetics. The production royalties fee for each IP-registered variety is 5% of the identified incoterm in column five. The information about the bunch weight[79] and number of bunches per square meter was obtained from the book, "*Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer*" (2019), which is used to calculate the yield per variety.

Table 3.2: Table grape varieties

Variety group	Variety code	Variety name	Patent holder	Production royalty (5%@incoterm)	Berry weight (g)	Avg Berries/bunch	Weight/ bunch	Bunches /m²
BS	ATR	Autumn Royal			6	110	682	6
RS	CSS	Crimson Seedless			5	110	583	6
BG	DBH	Dan Ben Hannah			6	75	465	6
WS	PSE	Prime Seedless®	Hoekstra Farms	FOB	6	95	551	6
RG	RGB	Red Globe			11	60	666	6
BS	SGT	Midnight Beauty®	Sun World	FOB	7	100	700	6
WS	THS	Thompson Seedless			5	110	572	6
RS	ALI	Allison®	SNFL	Ex-Works	9	85	757	5
WS	I10	Sweet Globe®	IFG	FOB	8	80	656	6
RS	I75	Sweet Celebration®	IFG	FOB	8	90	675	6
WS	S35	Autumn Crisp	Sun World	FOB	10	65	657	6
RS	SGE	Scarlotta™	Sun World	FOB	10	100	1 000	5
RS	TAW	Tawny Seedless®	Lombardi genetics	FOB	7	80	544	7
BS	S34	Adora Seedless™	Sun World	FOB	11	70	791	6
BS	I17	Sweet Joy®	IFG	FOB	8	90	675	6
RS	STL	Starlight®	Hoekstra Farms	FOB	7	85	578	6
WS	RGT	Regal Seedless			6	90	549	6

[79] The bunch weight is the weight of the berry multiplied with the average number of berries per bunch.

The harvest windows for each variety, presented in **Error! Reference source not found.**, was gathered from the data provided by the exporter. The shaded area represents a scenario within the 240 shipment invoices in the data set provided by the exporter. Often, a variety harvested in one specific week will receive several different prices depending on the quality, packaging, berry size, market and arrival date. The harvest windows provide an illustration of the different maturity periods for different varieties. The different colours in **Error! Reference source not found.**, graphically demonstrate the generic group the variety belongs to as indicated in Table 3.2. The three BS varieties, ATR, S34 and I17, have black shaded window periods. The RS varieties, CSS, ALI, I75, TAW and STL are shaded with a red-pinkish colour. The only BG variety is DBH, which is shaded in black with black spots. The other varieties, PSE, SGT, I10, S35 and RGT belong to the WS generic group, which is shaded in green. Figure 3.3 indicates how several varieties are harvested in the same week, which could cause a *bottleneck* in the packhouse. The harvest overlap is important to consider in farm operation and facility planning.

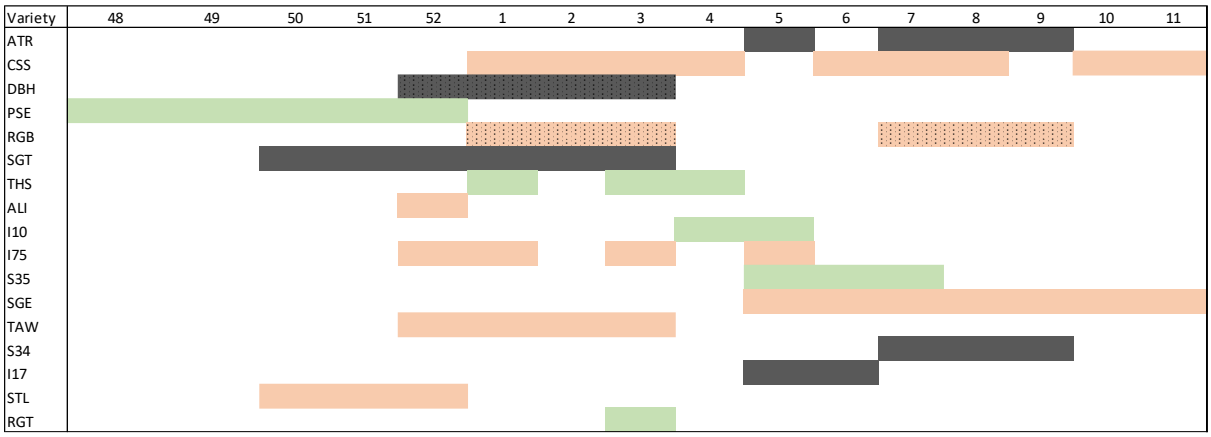


Figure 3.3: Harvest period in weeks per variety

3.6.2 Canopy Management strategy

The different canopy management strategies (TMRs) performed on the various table grape varieties at different phenological stages is based on the book, "*Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer*" (2019) and on the booklets provided by SNFL (2019) and IFG (IFG, 2020). The different TOs performed on table grapes are presented in groups in Table 3.3 and Table 3.4. The TMR for THS is explained to provide a background to the collection and processing of information about TMRs for table grape varieties.

The TMR for THS with the various TOs performed at the different phenological stages is visually demonstrated in a timeline, in Figure 3.16 in annexure 7.1. In winter dormancy the vine is pruned to 8 buds/m². Thereafter, when the length of shoots is between 20-30cm, weak-, double and shoots without bunches are removed. In the third technical management step, when the shoot length is between 60-80cm, shoots are spaced, and side shoots up to the bunch are removed. Before flowering,

bunches are hung through the trellis and poorly developed bunches are removed. The vine is also sprayed with 10ppm GA_3. At 50% flowering, the second application of GA_3 is sprayed and at 80% flowering 10ppm ureum is sprayed. After fruit set, the yield is thinned to 5/4 production capacity. When 50% of the berries are 4-5mm in size, vines are girdled and sprayed with 2ppm CPPU and 10ppm GA_3 with a wetter. Shortly thereafter, when 75% of the berries are 4-5mm in size, vines are sprayed again with 2ppm CPPU and 10ppm GA_3. Thereafter, when 100% of the berries are 4-5mm, 10ppm GA_3 is sprayed with a wetter. When berries are 6-7mm, bunches are trimmed, shortened, thinned, and tied up. The final preparation step is to loosen compact bunches and lift shoulders when berries are 8 to 10mm.

The information used to consolidate Figure 3.16, in the Annexure, was obtained from the book "*Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer*" (2019). The book provides the TMRs for 47 table grape varieties and a total of 67 manually performed TOs and 32 mechanically performed TOs performed on table grapes at various phenological stages. In the study the manual and mechanical TOs were divided into 13 and 6 groups, respectively. The large amount of TOs are due to small deviation in the TO when performed on different varieties, e.g. the crop load of TAW is thinned to 6,5 bunches per m^2, while DBH is thinned to 6 bunches/m^2 (Van Der Merwe, 2019). For programming purposes, each TO and TO group is abbreviated to five and two characters, respectively. The abbreviation for a manually performed TO starts with an H, while a TO performed mechanically starts with a T. The second character signifies the TO group. The 13 different manual TO groups are winter pruning (HP), shoot positioning (HO), girdling (HI), shoot thinning (HM), bunch positioning (HZ), removal of week bunches (HR), loosening of bunches (HL), shortening of bunches (HS), thinning of crop load (HX or HT), removal of leaves (HA), GA_3 dip application (HG), CPPU dip application (HC) and lastly, an ethephon dip application (HV). The 6 different mechanical groups are fertiliser application (TF), pest control (TP), application of ureum (TE), GA_3 spray application (TG), CPPU spray application (TG) and lastly, ethephon spray application (TV). The TOs within the respected groups are presented in Table 3.3 and Table 3.4.

3.6.3 Labour hours per variety

The labour hours associated with the various TOs performed on table grape varieties were obtained from two sources. The 2013 working schedule for Kanetvlei, a farm in the Hex River, Van der Merwe (2020). The working schedule indicates how many vines should be manipulated within an hour when one of twelve TOs are performed on thirteen different table grape varieties. A second data pool, with eight varieties and ten TOs was obtained from the Agricultural Research Council (ARC, 2020). The data from ARC indicates the number of hours per hectare required to complete a TO on a specific variety. The data from ARC was converted to vines per hour, i.e. how many vines can be manipulated within

an hour when the specific TO is performed on the variety. The data from Kanetvlei and ARC is summarised in Table 3.5, below. The varieties within Table 3.5 that correspond to the varieties in Table 3.2 are CSS, PSE, ALI, S35, STL and RGT. Therefore, the labour hours for 6 varieties of the 17 varieties in the Berg River study are available to make accurate calculations. The bottom line in Table 3.2 represents the average for all the varieties per action, which for calculation purposes will be used for the remaining varieties namely, ATR, DBH, RGB, SGT, THS, I10, I75, SGE, TAW, S34 and I17.

Table 3.5. represents 11 of the 13 different TO groups and 17 specific manually performed TOs that are presented in Table 3.3 and Table 3.4. The data for the different TOs with the associated TO groups are summarised in Table 3.5. The TO groups in Table 3.5 are winter pruning (HP), the tying of shoots (HO), removal of laterals (HR), removal of leaves around bunches (HA), the first and second leaf break (HA), the loosening of the bunch (HL), cluster thinning to 1 cluster per shoot (HT), the top/tip of a shoot (HM), girdling (HI), bunch shortening (HS), the removal of dominant shoots (HM), the dip application of GA_3 (HG), CPPU (HC) and ethephon (HV), cluster thinning (HT) and final bunch preparation (HL)[80].

[80] Certain abbreviations are not expressed in the Table 3.5 to ensure accurate calculation are made when algorithms are used.

Table 3.3: Canopy management practices

HP	HO	HI	HM	HZ	HR	HL	HS	HX
Winter prune	Shoot positioning	Girdle	Shoot thinning	Bunch positioning	Remove bunches	Loosen bunch	Shorten bunch	Thinning
8 Buds/m² (HP008)	Tie shoots (HO00T)	Girdle (HI00G)	Top/tip shoot (HM00T)	Tie up bunches (HZ00B)	Remove bunches in poor positions (HR00P)	Lift shoulders (HL00S)	Top bunch (HS00T)	1 bunch/shoot (HX1/C)
10 Buds/m² (HP010)	Space shoots (HO00S)		Remove weak shoot (HM00W)	Hang bunches through trellis (HZ00T)	Remove weak bunches (HR00W)	Trim cluster if necessary (HL00T)	Tip bunch (HS00T)	Thin bunches to 5/4 of production capacity (HX5/4)
12 Buds/m² (HP012)			Remove dominantent shoots around bunches (HM00P)		Remove laterals if necessary (HR00A)	Loosen compact bunches (HL00L)	Shorten shoulders by 1/3 (HS00S)	
15 Buds/m² (HP015)			Remove side shoot up to bunches (HM00S)		Remove tendril if necessary (HR00R)	Remove hard green berries (HL00G)	Shorten bunch to 4-5 laterals (HS005)	
			Remove lateral shoots without bunches (HM00B)		Remove poorly developed bunches (HR00D)	Count berries per bunch (HL00C)	Shorten bunch to 6 laterals (HS006)	
			Remove double shoots (HM00D)		Remove top twee laterals (HR002)	Remove lateral 3 and 5 (HL035)	Shorten bunch to 5-7 laterals (HS007)	
			Remove suckers (HM00U)		Remove top bunches on cane (HR00B)	Cut a path to loosen compact bunches (HL00K)	Shorten bunch ± 8cm (HS008)	
					Remove bunches with poor colour (HR00C)	Final bunch preparation (HL00F)	Shorten bunch ± 9cm (HS009)	
							Shorten bunch ± 10cm (HS010)	

Source: Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer (Van Der Merwe, 2019)

Table 3.4: Canopy management practices

HA	TF	TP	TE	HG	TG	HC	TC	HV	TV
Remove leaves	Fertilizer	Pest control	Growth Enhancer	Growth Enhancer (GA_3 Dip)	Growth Enhancer (GA_3 Spray)	Growth Enhancer (CPPU Dip)	Growth Enhancer (CPPU Spray)	Ethephon dip	Ethephon spray
Remove leaves around bunch (HA0LL)	N_2 (20kg/ha) (TFN20)	Spray for Thrips (TP00B)	Without wetter (TE0SB)	1ppm GA_3 Dip (HG001)	1ppm GA_3 Spray (TG001)	1ppm CPPU Dip (HC001)	1ppm CPPU Spray (TC001)	Dip Ethephon 10ml/100ml (HV010)	Spray Ethephon 10ml/100ml (TV010)
1st leaf break (HA1LB)	N_2 (30kg/ha) (TFN30)	Insecticides (TP00I)	1% lae bi-uret ureum (TE0BU)	1,5ppm GA_3 Dip (HG1,5)	1,5ppm GA_3 Spray (TG1,5)	1,5ppm CPPU Dip (HC1,5)	1,5ppm CPPU Spray (TC1,5)	Dip Ethephon 20ml/100ml (HV020)	Spray Ethephon 20ml/100ml (TV020)
2nd leaf break (HA2LB)	N_2 (40kg/ha) (TFN40)	Fungicide (TP00F)	with half strength non-ionic wetter (TE0N1)	2ppm GA_3 Dip (HG002)	2ppm GA_3 Spray (TG002)	2ppm CPPU Dip (HC002)	2ppm CPPU Spray (TC002)	Dip Ethephon 25ml/100ml (HV025)	Spray Ethephon 25ml/100ml (TV025)
Install plastic cover (HA0LC)	N_2 (45kg/ha) (TFN45)		Non-ionic wetter (TE1N2)	3ppm GA_3 Dip (HG003)	5ppm GA_3 Spray (TG005)	3ppm CPPU Dip (HC003)	5ppm CPPU Spray (TC005)	Dip Ethephon 30ml/100ml (HV030)	Spray Ethephon 30ml/100ml (TV030)
Open top of canopy about 30cm wide (HA0LS)	N_2 (50kg/ha) (TFN50)			4ppm GA_3 Dip (HG004)	10ppm GA_3 Spray (TG010)	4ppm CPPU Dip (HC004)	10ppm CPPU Spray (TC010)	Dip Ethephon 40ml/100ml (HV040)	Spray Ethephon 40ml/100ml (TV040)
	K & P (TFZ0B)			5ppm GA_3 Dip (HG005)	15ppm GA_3 Spray (TG015)	5ppm CPPU Dip (HC005)	15ppm CPPU Spray (TC015)	Dip Ethephon 45ml/100ml (HV045)	Spray Ethephon 45ml/100ml (TV045)
				7,5ppm GA_3 Dip (HG7,5)	20ppm GA_3 Spray (TG020)	7,5ppm CPPU Dip (HC7,5)	20ppm CPPU Spray (TC020)		
				10ppm GA_3 Dip (HG010)		10ppm CPPU Dip (HC010)			
				15ppm GA_3 Dip (HG015)		15ppm CPPU Dip (HC015)			
				20ppm GA_3 Dip (HG020)		20ppm CPPU Dip (HC020)			

Source: Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer (Van Der Merwe, 2019)

Table 3.5: The time required to perform different TOs on different table grape varieties (vines/hour)

TO group	HP	HO	HR	HA					HM		HS		HG	HC	HV	HX	HL
TOs		HO00T	HR00A	HA0LL	HA1LB	HA2LB	HL00L	HX1/C	HM00T	HI00G		HM00P					HL00F
Variety	Prune	Tie shoots	Remove laterals	Remove leaves around bunch	1st leave break	2nd leave break	Loosen compact bunches	1 bunch/ shoot	Top/tip shoots	Girdle	Shorten bunches	Remove dominant shoots around bunches	GA_3 dip	CPPU dip	Ripiner dip	Thinning	Final bunch prep.
ADL	33	15	27	6			4										10
ALI	40	35					2	25				50				30	
BAR	40	22			22		3									22	
CSS	26	16	20	12	25	30	4			33			65	65	65	22	12
DAU	40	22	20		25		3									16	
FMS	40	22	20		25		4	15		33	25					15	
KRI	40	22	20		25						40					22	
LAR	39	19	30	19	25		4									16	14
MGT	40	29			25				30			50				26	
MLY	40	29	25		25			25			50	50				26	
PSE	34	18	26	9	25		3						65	65	65	16	12
RGT	40	22			25				18		25					16	
S35	25	15			25	30			20							22	
STL	46	25	21	26	25		5						65	65	65	16	22
TRD	37			16			2										7
Other	37	22	15	15	25	30	3	20	23	33	33	50	65	65	65	20	13

Source: Van der Merwe (2020) and ARC (2020)

3.6.4 Chemical hormone cost

There are various chemical TOs used to manipulate vigour and fruit characteristics. The chemical hormone used to induce berry shatter to reduce the required amount of manual cluster loosening is GA_3. The chemical hormone, along with CPPU, is also used to increase berry size. While ethephon is used to improve véraison. An additional nutrient chemical spray is considered in the current study, namely ureum. Ureum is a form of nitrogen, which improve plant growth. The cost of the four chemical applications, presented in Table 3.5 were obtained in discussion with farmers in the Berg River. The various quantities of the chemical TOs required to cultivate table grapes are presented in column thirteen to nineteen in Table 3.3 and Table 3.4.

Table 3.6: Chemical cost

Chemical	Unit	Rand/unit
Ureum	R/ppm	R95,00
GA_3	R/ppm	R23,68
CPPU	R/ppm	R420,50
Ethephon	R/ml	R0,22

3.6.5 Importing markets

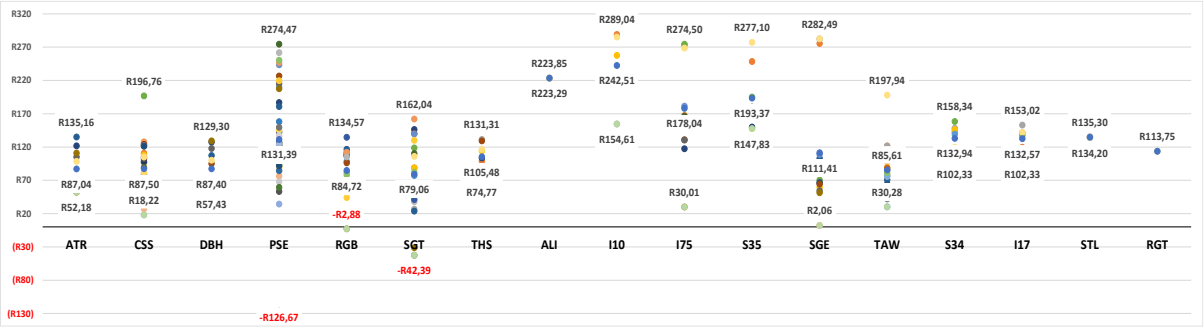
The data provided by the exported provided a wide range of different markets. The markets are only relevant to explain a 4,.5kg equiv. carton. There are twenty-four ports in twenty different countries namely; United Arab Emirates (AE), Canada (CA), Republic of the Congo (CD), Cameroon (CR), China (CN), United Kingdom (UK), Hong Kong (KH), Israel (IL), Sri Lanka (LK), Malaysia (MA), Netherlands (NL), Oman (OM), Qatar (QA), Reunion (RE), Russia (RU), Saudi Arabia (SB), Singapore (SG), Taiwan (TW), United States (US) and Vietnam (VT). The different countries are graphically presented in a world map vector with Africa in the middle in Figure 3.4.

Figure 3.4: Export market destinations for South African table grapes

3.6.6 Prices per table grape variety

In Figure 3.5, the various prices (PIB) for a 4,5kg equiv. carton per table grape variety is graphically illustrated in a scatter plot diagram. The maximum, average and minimum price received in the data set, provided by the exporter, is illustrated in the diagram with three unique values. The top value represents the maximum price, the middle value represents the average price and the bottom value is the minimum price for each variety. The prices and number of different prices for each variety vary within the diagram.

Figure 3.5: Prices for different table grape varieties obtained in the 2019/2020 season (R/4,5kg)



3.6.7 Production costs

The current study evaluates the variation in labour cost and chemical hormone cost associated with different varieties. There are however other direct production costs that should be accounted for

Table 3.7: The annual direct production costs for table grapes in 2019 (R/ha)

Fertiliser and organic material	R21 455,00
Pesticide and herbicide	R20 732,00
Supervision and labour	R127 200,00
Fuel, oil, repairs, parts and maintenance	R20 000,00
Licences and insurance	R2 375,00
Hired transport	R3 982,00
Electricity	R20 471,00
Water	R2 022,00
Land, property and municipal taxes, administration and miscellaneous	R8 153,00
Packaging and marketing	R111 252,00
Total cash expenditure	R337 642,00
Depreciation	R41 086,00
Total production Cost	R378 728,00

Source: Statistics of table grapes in South Africa (Ferreira, 2020)

when the profitability of a vineyard is calculated. The other direct production cost for table grapes was obtained in the annual statistical booklet provided by SATI (Ferreira, 2020). The direct production cost/ha is considered as a constant variable in the current study. According to Ferreira (2020), the annual direct production cost for table grapes in 2019/ha was R378 728. The various inputs that

contribute to annual direct production cost for table grapes are presented in Table 3.6. The cost of the inputs are as follows; fertiliser and organic material is R21 455/ha, pesticide and herbicide cost R20 732/ha, supervision and labour is R127 200/ha, the sum cost of fuel, oil, repairs, parts and maintenance is R20 000/ha, license and insurance is R2 375/ha, hired transport is R3 982/ha, electricity is R2 0471/ha, water is R2 022/ha, the sum of land, property and municipal taxes, administration and miscellaneous is R8 153/ha, packaging and marketing is R111 252/ha, and lastly, depreciation is R41 086/ha.

3.6.8 Establishment cost

The establishment of a new vineyard block is considered to calculate the IRR on a vineyard block. The establishment cost was also obtained in the annual statistical booklet provided by SATI (Ferreira, 2020). The total establishment cost/ha of a new vineyard is R449 317. The breakdown of the total establishment cost is presented in Table 3.7. The total establishment cost consists of a new trellis system that costs R94 014/ha, a new irrigation system of R30 199/ha, drainage of R16 407/ha, the sum cost of fuel, oil, repairs, parts and maintenance equiv. to R13 568/ha, hired transport of R458/ha, the establishment of a net worth R99 328/ha, pesticide and herbicide of R3 658/ha, soil preparation of R72 638/ha, the cost of new vines worth R57 047/ha. And lastly, the cost of supervision, permanent labour, and seasonal labour of R62 000/ha.

Table 3.8: The cost to establish a new vineyard in 2019 (R/ha)

Trellis system	R94 014,00
Irrigation system	R30 199,00
Drainage	R16 407,00
Fuel oil repairs parts and maintenance	R13 568,00
Hired transport	R458,00
Nets	R99 328,00
Pesticide and herbicde control	R3 658,00
Soil preparation	R72 638,00
Supervision, permanent-, seasonal- and contract Labour	R62 000,00
Vines	R57 047,00
Total	R449 317,00

Source: Statistics of table grapes in South Africa (Ferreira, 2020)

3.6.9 Assumptions

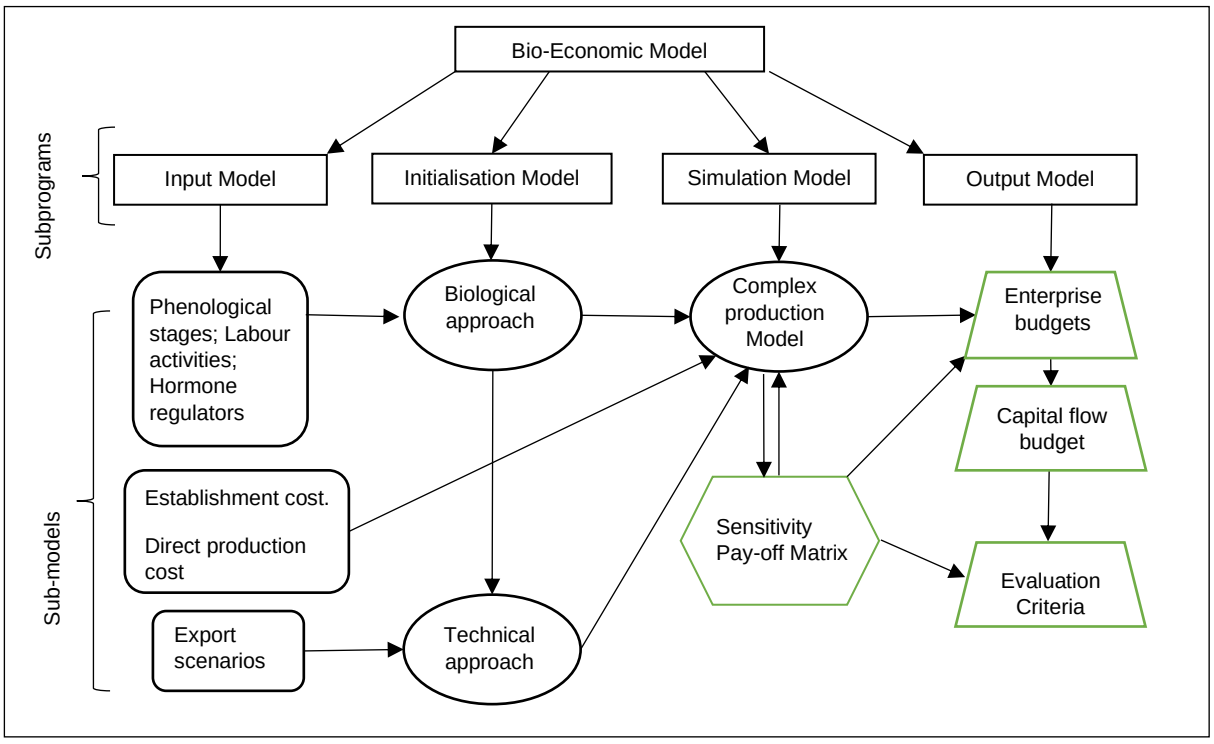
There are various values kept constant in the current study to measure the exact effect of the five variables. Labour cost is R18,5 per hour and besides all the specified time values to complete the actions in Table 3.5, to spray a 1 hectare vineyard blocks requires 1,5h. Another assumption is the number of vines on a hectare. Vineyards in the simulation model are planted in 3m wide rows with a 1,5m space in between vines in the row, therefore, there are 2 222 vines/ha.

From a financial point of view, there is zero inflation. and the establishment of new vineyards is paid with 40% own capital and 60% with borrowed capital. The study does not account for establishment royalty costs. The final assumption is regarding the other labour required on the farm. Labour cost on a table grape farm significantly increases in the packhouse. The supervisions and labour in Table 3.6 account for the labour in the packhouse, administration office and salaries of supervisors. The information provided by Ferreira (2020) does not provide enough clarity to indicate if the supervision and labour cost was is different for varieties in the field or even how much of the cost was in the field and in the packhouse. For the purpose of the current study, labour and supervision cost is kept constant to measure the effect a change of infield labour, rather than calculating the exact total labour cost. If the model would be used in practice, financial figures can be adopted.

3.7 Simulation system description

The performance of the varieties in the Berg River is measured with the use of enterprise budgets for two hypothetical farms with twenty cultivated blocks over a fifth-teen year period. The twenty enterprise budgets for each farm are summarised into a capital flow budget. An enterprise budget consists of expenditure, yield and income values associated with five variables and twenty-two constant variables. The five variables evaluated in the study, namely price, yield, royalty-, labour- and chemical hormone cost are calculated for each enterprise individually in a complex enterprise system

Figure 3.6: Complex enterprise simulation model



simulation model. The flow of data and information in the complex enterprise simulation system is visually illustrated in Figure 3.4. The simulation model is constructed from the prescribed subprograms recommend by Dent (1979), namely an input-, initialisation-, simulation-, and output model.

3.7.1 Input component

The source of the model is referred to as the input model. The input model is the first subprogram which contains all the data fields. The data fields are constructed with the qualitative and quantitative data and information discussed above. The input model contains Table 3.2 to calculate the total yield for each variety, Table 3.3 and Table 3.4 to provide possible TOs to consolidate the TMRs for each variety, Table 3.5 to calculate the labour hours required to complete the TMRs, Table 3.5 to calculate the chemical hormone costs of the TMRs, Table 3.6 to provide a direct production cost value, Table 3.7 to provide a value for the year when a new vineyard is established, Annexure 7.2**Error! Reference source not found.** to extract a price and to calculate the royalty cost per variety, and last is Figure 3.3**Error! Reference source not found.**, which is used to determine the weekly harvest schedule.

3.7.2 Initialisation model

The initialisation model is the second subprogram in the Bio-Economic model, which processes the relevant biological and technical aspects in the table grape production system. The biological aspect determines the direct relationship between plants, production conditions and other influential factors (Csáki, 1985). While the technical aspect is focused on human involvement in order to simulate production operations and provide valuable information to assist farm managers with work scheduling and machine and labour utilisation (Csáki, 1985). The combination of a biological- and technical approach is referred to as a complex production system, which provides a platform to explore different input combinations and sequences to provide a better understanding and improve knowledge regarding interdependences between primary factors (Csáki, 1985).

3.7.2.1 Activities

In the biological approach and cultivation factors for the seventeen varieties are determined based on the book "*Riglyne vir die voorbereiding van tafeldruiwe vir uitvoer*" (Van Der Merwe, 2019) and other production guideline booklets (IFG, 2020; Snfl Group, 2019). The book and booklets demonstrate the canopy management strategies performed on the seventeen varieties and provide an indication of the expected weight per bunch and bunches per square meter for each variety. Thus, the biological submodel determines the TMRs and the expected yield for the seventeen varieties evaluated.

3.7.2.1.1 Technical management routes (TMRs)

The sequence of events performed on various varieties are expressed as technical management routes (TMRs)[81]. The TMRs includes time frames associated with the various phenological stages to determine a logical sequence of tactical options (TOs)[82] performed on vines to manipulated growth and fruit quality. The TOs refer to the canopy management techniques discussed in chapter 2 and the various TOs presented in Table 3.3. The abbreviated TOs in Table 3.3 are plotted in the sequence order prescribed by Van der Merwe (2019), SNFL (2019) and IFG (2020) into the table grape viticultural schedule in **Error! Reference source not found.** to Table 3.24**Error! Reference source not found.**. The abbreviated TOs are plotted where the variety (row) meets the phenological stage (column) to simulate the TMRs for each variety, which is graphically expressed in a timeline (see Figure 3.16**Error! Reference source not found.**). The TMRs can be adjusted to the farmers logical framework or to the desired TMRs. The abbreviations provide a programming "bread crumb" to calculate the labour hours and chemical cost in the technical approach.

Table 3.9: Yield potential based on the age of the vineyard

Vine age (Years)	Yield potential (%)
x < 2	0%
x = 2	30%
x = 3	70%
3 < x < 15	100%
15 <= x <18	75%
x => 18	66%

Table 3.10: Actual yield percentage of genetic potential

Variety	Actual harvest percentage (% of calc. yield)
THS	38%
RGB	33%
TAW	65%
PSE	56%
ATR	36%
DBH	51%
CSS	39%
SGT	44%
ALI	64%
I10	55%
I75	59%
S35	60%
SGE	42%
S34	40%
I17	39%
STL	58%
RGT	68%

3.7.2.1.2 Yield expectation

Yield is calculated with a sequence of steps. First, the number of vines is calculated, followed by the number of bunches per vine and the weight of a bunch. The three values are multiplied with one another to determine the yield in grams/ha, which is converted to kilograms. The yield in kilograms/ha is divided with 4,5kg to determine the cartons/ha. The cartons/ha is adjusted twice thereafter. First, the cartons/ha is multiplied with the production age key performance percentage and then with the variety's production performance, which was discussed at the Berg River table grape Production Symposium (Van der Merwe, 2020).

A vines age is especially considered when determining yield. The yield of vineyards is adapted to Table 3.9. Table 3.9 indicates how much of the varieties potential yield is obtained throughout the vineyard's lifetime. The first yield is only 30% of the variety's

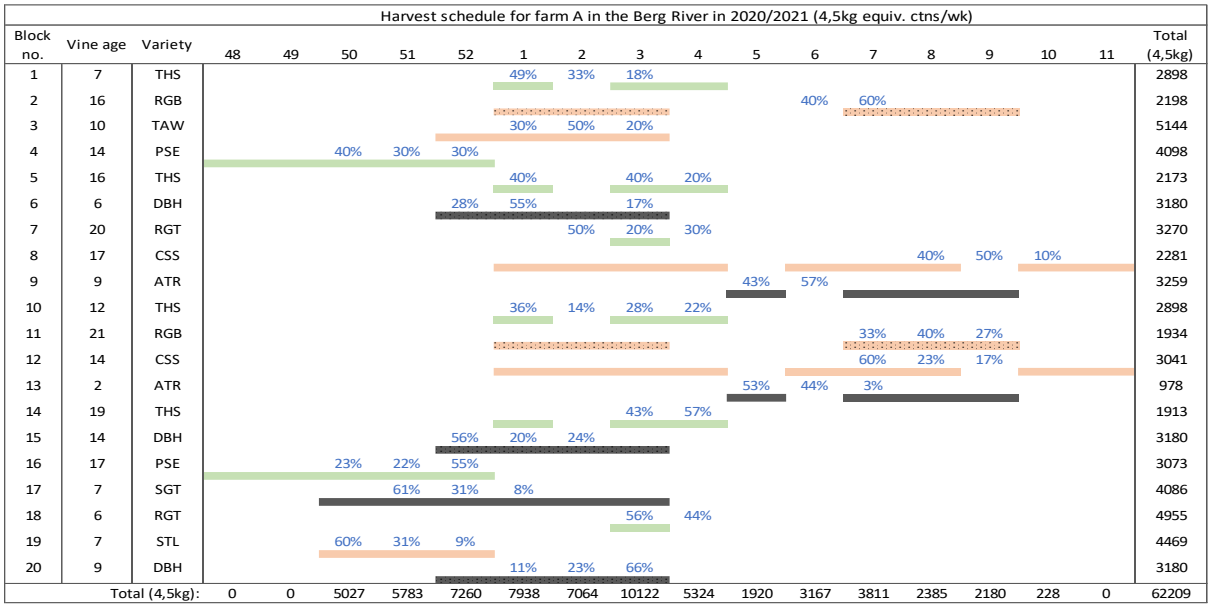
[81] TMRs are also referred to as a tactical management system and a canopy management strategy.
[82] Tactical management decision are made 3 to 4 times a year regarding a sequence of events that must be implemented (Shadbolt & Martin, 2005).

potential, which is obtained in year two. When the vineyard is two years old a yield equiv. to 70% of the potential yield is obtained. A vineyard older than three years and younger than fifteen years yields 100% of the variety's potential. Yield starts to decline thereafter, thus a fifteen, sixteen or seventeen-year-old vineyard only produces 75% and a vineyard eighteen years old or older only produces 66% of the variety's potential yield. The yield potential percentages described in Table 3.9 is based on the literature discussed in Chapter 2.

The farm performance percentage is an additional pay-off matrix incorporated into the model to ensure to calculated yield is realistic and output results collated with the figures discussed at the Berg River table grape production symposium (Van der Merwe, 2020). The actual yield for the seventeen varieties is expressed in a percentage in Table 3.8. The percentage indicates how much of the mathematically calculated yield is produced and harvested.

The harvest windows for each variety, graphically expressed in Figure 3.7, is considered to determine how many cartons will be packed in a week. The model user indicates when and how much of the total yield is harvested in Figure 3.7. The quantity and timing of the harvest is noted in a percentage of the total yield above the shaded areas. The total yield percentage for the block is converted to 4,5kg equiv. cartons and expressed in the column on the right. While the total harvest for the week considers the contribution of all the blocks that are harvested in that week, which is quantified in the bottom row in 4,5kg equiv. cartons. The anticipated harvest schedule is indicated annually in the model, therefore, each farm simulation model requires 15 harvest week schedules. The calculated yield per week is used to make a logical conclusion whether a new varietal portfolio will cause bottlenecks or a bull-whip effect in the packhouse. While the total block yield is used to calculate the total income in the enterprise budget for the specific block.

Figure 3.7: Simulation of the expected harvest per week



Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	7	THS						49%	33%	18%									2898
2	16	RGB											40%	60%					2198
3	10	TAW						30%	50%	20%									5144
4	14	PSE			40%	30%	30%												4098
5	16	THS						40%		40%	20%								2173
6	6	DBH					28%	55%		17%									3180
7	20	RGT							50%	20%	30%								3270
8	17	CSS													40%	50%	10%		2281
9	9	ATR										43%	57%						3259
10	12	THS						36%	14%	28%	22%								2898
11	21	RGB												33%	40%	27%			1934
12	14	CSS												60%	23%	17%			3041
13	2	ATR										53%	44%	3%					978
14	19	THS								43%	57%								1913
15	14	DBH					56%	20%	24%										3180
16	17	PSE			23%	22%	55%												3073
17	7	SGT				61%	31%	8%											4086
18	6	RGT								56%	44%								4955
19	7	STL			60%	31%	9%												4469
20	9	DBH						11%	23%	66%									3180
		Total (4,5kg):	0	0	5027	5783	7260	7938	7064	10122	5324	1920	3167	3811	2385	2180	228	0	62209

3.7.2.2 Activity costing

In this component, a financial value is added to the TOs performed at the various phenological stages in Table 3.3 and Table 3.4. The value is based on raw data presented in Table 3.5. Table 3.5 indicates how many vines can be manipulated when a specific TO is performed on a variety. The various TOs and the time to perform a specific TO on various varieties are different, i.e. there are two variables to consider when a value is added to an abbreviation, namely, the type of TO and the variety. Often in literature, the data for bio-economic processes are limited (Csáki, 1985), thus in situations when data is unavailable for a specific variety or TO an assumption is made based on other TOs and varieties.

3.7.2.2.1 Labour cost

The TMRs are descripted to ensure each TO at the various phenological stages receives the appropriate time and cost value. The descripted TMRs are presented in the Annexure table 4.7, table 4.8 and table 4.9 to which a time value is added from Table 3.5 to calculate the total labour cost. The time value data in Table 3.5 is obtained with an algorithm, known as an index formula. An index formula returns a cell value at an intersection of a specific row and column within the data set. The specific row and columns are identified with a match formula. The match formula returns the position of the row and column in the data array. The index algorithm is presented in Equation 3.1 and graphically expressed in **Error! Reference source not found.**.

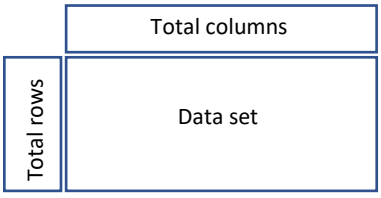
Equation 3.1: Index algorithm

$$= Index(data\ set;$$

$$match(desired\ row, total\ rows\ in\ the\ data\ set; 0);$$

$$match(desired\ column, total\ columns\ in\ the\ data\ set; 0)$$

Figure 3.8:Graphical representation of index algorithm



A value is added to the descripted TMRs in Annexure table 4.7, table 4.8 and table 4.9 with **Error! Reference source not found.** by extracting quantitative data from Table 3.5. As demonstrated in Figure 3.6, the desired row is where the variety selected in Annexure table 4.7, table 4.8 and table 4.9 is positioned in the variety list in Table 3.5 and the desired column is where the selected abbreviation in Annexure table 4.7, table 4.8 and table 4.9 is positioned in the column headings in Table 3.5. Regarding the desired row, the model will interpret varieties that are not presented in Table 3.5 as other. While various alternatives are available to determine the desired column. The model will first search for an exact TO abbreviation in the column heading and if there is no exact match with a TO abbreviation, the model will match with TO groups. In minor cases where no match is found with a TO or TO group, an assumption is made. The extracted value from Table 3.5 is converted from vines per hour to hours/ha (2 222 vines), and thereafter, multiplied with a labour cost of R18,50 per hour to determine the cost of a TO with the various varieties.

3.7.2.2.2 Chemical hormone cost

The hormone chemical cost per variety is determined with a simar index algorithm. The index algorithm is simplified to determine the row number of the TO abbreviation in Table 3.5. Thus, no match is made with the column headings. The chemical cost is sensitive to the quantity used and is therefore calculated per ppm and multiplied with the specified chemical TO quantity in Table 3.5.

3.6.2.2.3 Price per 4,5kg equivalent carton

The price received for a 4,5kg equivalent cartons (PIB) is calculated in the export datasheet. A series of deductions are made to calculate the incoterms in chronological order. First, the Free-on-Board (FOB) price is calculated, followed by the Delivered-in Port (DIP) price, Ex-works price and last is the Price-in-Bank (PIB). First, the FOB is the net trade amount received for the container, minus the sea freight charges. Second, the DIP is FOB minus all the charges to get the shipment in the port, including cooling and inspection charges. Third, the ex-works value is DIP minus transport and cooling charges in the importing country. Last, the PIB is the Ex-works value minus bank charges, levies, prioritised charges and claims on poor quality grapes. The value of an incoterm per carton is the value of the entire shipment at the given incoterm divided with the quantity shipped. The quantity shipped is equivalent to 4.5kg cartons. If the cartons are equivalent to a 5kg carton, the total value of the incoterm is divided with the quantity shipped, then divided with 5 to obtain a 1 kg equivalent price, and then multiplied with 4,5.

3.6.2.2.4 Royalty costs

Within the enterprise budget of a block the PIB is the only variable that can be changed. The PIB provides a programming “bread cram” to determine the incoterms in 7.2 Annexure B: Table grape export data set

Table 3.19 associated with the specific PIB. The royalty value percentage in Table 3.2 is used to select the appropriate incoterm in 7.2 Annexure B: Table grape export data set

Table 3.19. The royalty cost per 4,5kg equiv. carton is mathematically calculated by multiplying 5% with the appropriate incoterm. Thereafter, the royalty cost per 4,5kg equiv. carton is multiplied with the harvest for each block. Although this calculation is only exercised within the enterprise model in the output model.

3.7.3 Simulation model

Biological and technical aspects of a table grape farm scenario are processed in the complex production simulation model to determine an economic value for the five variables evaluated in the study. The information provided from the initialisation model is configurated in the simulation model and expressed in financial terms in the output model. The complex production system accounts for

the production processes and interrelationships between components in certain situations. According to Csáki (1985), interrelationships in production[83] orientated complex models are either described on a yearly basis, according to plant development stages or on weekly basis.

The simulation model in the current study simulates three time periods to calculate the five variables and to provide a fundamental platform to conduct a sensitivity analysis. The first simulated time period is the harvest week schedule presented in Figure 3.7 to determine the change in yield per week when the variety portfolio changes. The second simulation period is the phenological stages and TMRs expressed in **Error! Reference source not found.Error! Reference source not found.** to determine the labour and chemical cost for the varieties in the farm simulation. Third, is the simulation of a farm over a fifteen-year period from 2020 to 2034 to calculate the IRR for each block when the varietal portfolio changes once within the fifteen-year period.

[83] Production simulation can refer to either a single or a groups of plant work operations, the entire plant production process or the entire farm mechanisation system, which include machine utilisation and the requirements to produce the entire commodity rage (Csáki, 1985).

Table 3.11: The variety portfolio sensitivity analysis

Current variety portfolio					Future variety portfolio		
Block no.	Block size	Variety	Variety group	Year planted	Variety	Variety group	Year planted
1	1	THS	WS	2016	ALI	RS	2027
2	1	RGB	RG	2015	I10	WS	2028
3	1	TAW	RS	2010	PSE	WS	2026
4	1	PSE	WS	2006	S34	BS	2029
5	1	THS	WS	2004	CSS	RS	2025
6	1	DBH	BG	2014	CSS	RS	2030
7	1	RGT	WS	2000	RGB	RG	2024
8	1	CSS	RS	2003	ALI	RS	2023
9	1	ATR	BS	2006	I17	BS	2023
10	1	ATR	BS	2014	S35	WS	2025
11	1	RGB	RG	1999	ALI	RS	2022
12	1	CSS	RS	2006	THS	WS	2033
13	1	ATR	BS	2004	ATR	BS	2021
14	1	RGT	WS	2001	I10	WS	2034
15	1	DBH	BG	2006	PSE	WS	2020
16	1	PSE	WS	2003	S35	WS	2022
17	1	SGT	BS	2013	ALI	RS	2026
18	1	RGT	WS	2000	I17	BS	2025
19	1	STL	RS	1999	I75	RS	2027
20	1	DBH	BG	2015	TAW	RS	2022

The face of the simulation model is Table 3.11. Table 3.11 is a sensitivity pay-off matrix, which is incorporated into the production simulation model to change the varietal portfolio. The farm scenario is created in the pay-off matrix. The model user can select the current varieties cultivated in twenty blocks, indicate the year when the vineyard was established and the size of the block. Thereafter, the user indicates the future variety that will be planted in the variety from a drop-down list and indicated when the variety will be planted.

3.7.4 Output model

The financial situation of the Farm Business is expressed in the output component. The information generated in the previous subprogram, the production simulation model, is expressed in twenty enterprise budgets to calculate the feasibility, profitability, marginality, and opportunity costs for the various cultivated blocks. Thereafter, the financial situation of the Farm Business is summarised in a capital flow budget over a fifth-teen year period. A budget is a traditional accounting system used to simulate business operations in regards to the financial balance (Csáki, 1985). However, a budget type simulation model does not incorporate various production and operations processes but rather

describes the whole production process in a yearly aggregated way (Csáki, 1985). Therefore, the biological technical approach is included in the bio-economic simulation model to analyse the effect of various TMRs on the annual financial business situation.

The various enterprise budgets are used to assist with rational decisions (Shadbolt & Martin, 2005). The annual income and expenses over a fifth-teen year period for the current variety and TMRs can be compared in the twenty enterprise budgets. Each enterprise budget is uniquely described in the sensitivity pay-off matrix in Table 3.11 regarding variety, vine age and block size. Furthermore, within the enterprise budget various prices for a 4,5kg equiv. carton is available in a drop-down list to determine to total income for the block per year. The five variables measured in the study determine the difference in varietal performance. Thus, production and establishment cost are only affected by the block size. A change in inventory value and non-cash commitments are not accounted for in the enterprise budget (Shadbolt & Martin, 2005), therefore, depreciation is not included. The total expenditure is deducted from the total income to calculate the earnings before, interest, tax, depreciation, and amortisation (EBITDA), which is used to calculate the IRR. Thereafter, in a capital flow budget the twenty enterprise budgets summarised.

3.8 Conclusion

With the proposed simulation model, the IRR will be calculated when a farm changes the current variety portfolio to the future variety portfolio as presented in Table 3.11. The data and information discussed in Chapter 3 will be incorporated into an enterprise budget to calculate the IRR for each block. The difference in IRR between each block will be evaluated from the perspective of the five variables that are investigated in the study, namely, price, royalty cost, yield, labour cost and cost of chemical hormone regulators. The effect the five variables have on the IRR will be determined in Chapter 4. The results should indicate which variable significantly increase IRR. The final factor that will be investigated is the effect the variety portfolio imposes on the weekly harvest schedule.

Chapter 4: Results

4.1 Introduction

The main aim of this research project is to identify the key factors that influence the establishment consideration for table grapes and to quantify the expected effect of each. The key points in the annual growth cycle of table grapes were discussed in some detail as well as the differences between the various varieties. Of importance are the factors that contribute to either yield or quality (price). A model was constructed that can assist a producer to compare the varieties and to determine the impact on the exciting system in detail. The results are presented and discussed in four sections. First, the five variables in the equiv. of 4,5kg cartons of the seventeen varieties evaluated in the study are summarised and discussed. Thereafter the outcome of the different canopy management strategies (TMRs) for each variety, are interpreted to provide background for the farm scenarios. The performance of each variety is evaluated in the two farm scenarios by measuring the change in cash flow when a vineyard is replaced with a new variety. The profitability of each block is determined and discussed. Lastly, the significance of the five key variables are determined.

4.2 The five variables in the evaluation criteria

Table 4.1 contains three sections, namely, variety description, export scenario, and the value of the five variables for each variety. The first section indicates the different varieties with the generic group names, variety codes, variety names and the patent holder. The second section indicates what scenario is selected from the 240 scenarios provided by the exporter. The scenario is used to determine the price and royalties per variety in the third section of the table. The export scenario section indicates when the variety was harvested, the berry size, packaging, market destination and the time the carton arrived in the market. The third section is a criterion to compare varieties based on the five variables evaluated in the current study, i.e. yield per hectare, price-, royalties-, labour- and chemical hormone costs per 4,5kg equiv. carton. The second section in Table 4.12, provides clarification of the variety product, i.e. 4,5kg equiv. carton, used to compare the performance of each variety against one another in Section 4.4. All the values in Table 4.12 have been converted to a 4,5kg equiv. carton to provide credibility to the results. Throughout the study, the specified cost and income associated with a variety is based on the export scenario and value of the variables in Table 4.12.

Table 4.12: Varietal performance measured with a 4,5kg criteria

Variety description				Export scenario					Variables: 4,5kg equiv. cartons				
Variety group	Variety code	Variety name	Patent holder	Harvest week	Berry size	Packaging	Market	Market arrival week	Yield (4,5kg/ha)	Price (R/4,5kg carton)	Royalties (R/4,5kg carton)	Labour cost (R/4,5kg carton)	Chemical cost (R/4,5kg carton)
BS	ATR	Autumn Royal		7	XL	B04I; ZL	RU	13	3259	R135,16		R5,20	R0,40
RS	CSS	Crimson Seedless		2	L	B04I; ZL	AE	6	3041	R110,88		R7,30	R0,65
BG	DBH	Dan Ben Hannah		53	XL	B04I; SZ	RU	5	3180	R94,98		R5,85	R0,00
WS	PSE	Prime Seedless®	Hoekstra Farms	52	XL	B04D; ZL	KH	3	4098	R158,24	10	R6,11	R0,46
RG	RGB	Red Globe		8	XL	B04I; ZL	QA	14	2930	R105,11		R6,10	R0,28
BS	SGT	Midnight Beauty®	Sun World	50	L	B04I; ZL	AE	2	4086	R105,92	7	R3,65	R0,94
WS	THS	Thompson Seedless		3	XL	B04I; ZL	RU	9	2898	R129,30		R9,26	R1,64
RS	ALI	Allison®	SNFL	52	L	B08D; CB	CA	8	5370	R223,29	14	R5,85	R0,24
WS	I10	Sweet Globe®	IFG	4	L	A05D; HS	UK	9	4796	R154,61	10	R2,31	R0,33
RS	I75	Sweet Celebration®	IFG	5	L	B08D; CB	CA	10	5347	R117,35	9	R1,92	R0,60
WS	S35	Autumn Crisp	Sun World	5	L	A05D; HS	NL	9	5246	R147,83	10	R7,02	R0,30
RS	SGE	Scarlotta™	Sun World	8	L	A05D; PU	NL	12	4627	R102,92	8	R2,07	R0,83
RS	TAW	Tawny Seedless®	Lombardi genetics	52	XL	B08D; CB	CA	7	5144	R101,58	10	R5,22	R0,43
BS	S34	Adora Seedless™	Sun World	7	XL	B04I; ZL	VT	12	4269	R102,33	6	R4,33	R0,18
BS	I17	Sweet Joy®	IFG	6	XL	B04I; ZL	VT	12	3529	R102,33	6	R7,07	R0,52
RS	STL	Starlight®	Hoekstra Farms	51	L	A05D; PL	MA	5	4469	R134,20	9	R4,54	R1,13
WS	RGT	Regal Seedless		3	XL	B04I; ZL	RU	9	4955	R113,75		R6,88	R0,00

4.2.1 Yield (4,5kg equiv. cartons per hectare)

The calculated yield was reduced significantly to collated with the Berg River table grape production symposium (Van der Merwe, 2020). The potential yield was calculated mathematically and reduced with an actual potential percentage based on the average harvest per variety (Van der Merwe, 2020). The calculated and actual yield is presented in Table 4.2. The expected yield was calculated following the steps described in Section 3.7.2.1.2. The calculated yield presented in Table 4.2 is equivalent to a vine that is in full production, thus the yield presented in Table 4.2 is for vines from the age of 4 to 14.

The yield used in the study is presented in the third column in Table 4.2. The yield calculated mathematically in column one is too high to provide credibility to the results obtained in the study. Therefore, the yield is reduced with the actual yield percentage presented in column two. The actual yield percentage is based on the average yield obtained per variety for the 69 participants in the Berg River production symposium. The percentage indicates how much of the calculated yield is achieved.

Table 4.13: Yield validation

Variety	Calculated yield (4,5kg/ha)	Actual yield (%)	Actual yield (4,5kg/ha)
ATR	9092	36%	3259
CSS	7773	39%	3041
DBH	6199	51%	3180
PSE	7346	56%	4098
RGB	8879	33%	2930
SGT	9332	44%	4086
THS	7626	38%	2898
ALI	8405	64%	5370
I10	8746	55%	4796
I75	8999	59%	5347
S35	8752	60%	5246
SGE	11110	42%	4627
TAW	7857	65%	5144
S34	10546	40%	4269
I17	8999	39%	3529
STL	7706	58%	4469
RGT	7319	68%	4955

The yield for all the varieties was reduced and Table 4.2 indicates only 36% of the calculated yield for ATR is achieved. Therefore, the expected average yield for ATR is 3259 4,5kg equivalent cartons per hectare. The other varieties can be interpreted similarly.

4.2.2 Price (Rand per 4,5kg equiv. carton)

The price for each variety is obtained from the export scenario in Table 4.12. The export scenario selected for each variety was based on the figures discussed at the Berg River table grape production symposium, which was held on 12 November 2020 (Van der Merwe, 2020). Figure 4.1 indicates the selected price for each variety is not the highest or lowest price a variety obtained in the export data set. All of the prices used in the study collated with the net income discussed at the Berg River table grape production symposium (Van der Merwe, 2020), except the price for ALI. The data set did not provide a price that was aligned with the financial figures discussed at the symposium. Consequently, the price for ALI is high compared to the other varieties.

The prices in the data set is directly affected by the export scenario in Table 4.12. All the harvest dates are aligned with the harvest weeks for each variety proposed by Ferreira (2020). The berry sizes are

either large (L) or extra-large (XL). The various packaging in Table 4.12 indicates the outer and inner packaging. The different outer packagings are 4,5kg carton (B04I), 4,5kg interlock carton (B04D), 5kg punnet carton (A05D) and 7,8kg display carton (B08D) and the various inner packaging are zip lock bags (ZL or ZS), punnets (PU), carry bags (CB), polly coat (PL), while the meaning of the abbreviation HS is unknown. The importing markets associated with the price for each variety are Russia (RU), United Arab Emirates (AE), Qatar (QA), Netherlands (NL), Vietnam (VT), Canada (CA), Hong Kong (KH), United Kingdom (UK) and Malaysia (MA).

There are numerous alternative scenarios for each variety in the export data set, which is demonstrated in Figure 4.1. Figure 4.1 demonstrates whether the price selected for a variety is high, low or average compared to the other prices the variety obtained in the data set. The selected price for the varieties ATR, CSS, DBH, RGB, THS, ALI and TAW are considered high. The selected price for PSE, SGT, SGE, I17, STL and RGT are average, while the selected prices for I10, I75, S35 and S34 are low.

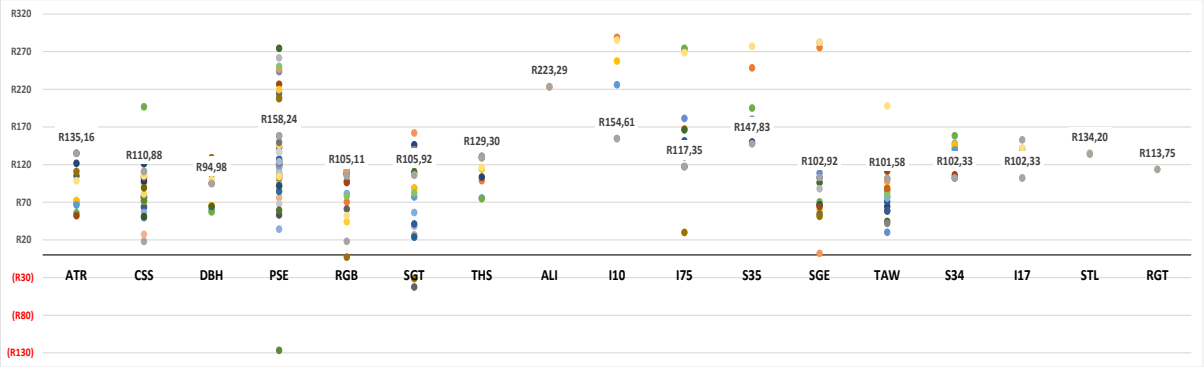


Figure 4.9: Variety price validation

4.2.3 Royalties (Rand per 4,5kg equiv. carton)

The third factor evaluated in the study is royalty-bearing costs. The royalty-bearing cost in unique to the variety and the price obtained in the market. Table 4.12 indicated the royalty charges per 4,5kg equiv. carton for each variety. Only six of the varieties in Table 4.12 do not adhere to royalty charges, namely, ATR, CSS, DBH, RGB, THS and RGT. The remaining varieties, excluding ALI, absorb a 5% royalty-bearing cost at the FOB value. While the royalty charges for ALI is calculated from the ex-works value. The royalty cost per 4,5kg equiv. carton, for the eleven royalty-bearing varieties, used in Section 4.4.1. to calculate the MIRR is stated below, respectively.

First, the Free-on-Board (FOB) price for ALI is R290,28 and the Ex-works price is R277,78. The royalty charges for ALI is 5% of the ex-works price, thus R13,89, which is only R0,62 lower than 5% of the FOB price. Second, the royalty costs of R9,68 for PSE per 4,5kg carton is equivalent to 5% of the FOB value of R193,53. Third, the royalty cost for SGT is R6,77, which 5% of R135,47. Fourth, I10 has a royalty cost of R9,95, which is 5% of the FOB value of R199,03. Fifth, the FOB value for I75 is R184,09, therefore

the royalty cost for I75 is R9,20. Sixth, the R10,01 royalty cost for S35 is 5% of the FOB value of R200,10. Seventh, SGE has a FOB value of R151,92, thus a royalty cost of R7,60. Eighth, the royalty cost for TAW is R9,73, which is 5% of the FOB value of R194,58. Ninth and tenth is S34 and I17 with a royalty cost of R5,87, which is 5% of the FOB value of R117,30. And the last royalty equiv. to 5% of FOB value is STL with a FOB value of R175,07, which is equiv. to a royalty charge of R8,75 per carton.

4.2.4 Labour (Rand per 4,5kg equiv. carton)

The total labour hours required per variety is calculated with the technical approach described in Section 3.7. The canopy management strategy, also known as the technical management route (TMRs), for each variety is presented in Table 3.11. The technical options (TOs) are presented in Table 4.25, Table 4.26 and Table 4.27 to provide an accurate time estimate for each TO performed at the various phenological stages of table grape development. The time allocated to the abbreviated TOs are presented in Table 4.28, Table 4.29 and Table 4.30. The time required to perform the different TOs are variety specific. Therefore, the data from table 3.4 is allocated to the different TOs for each variety in Table 4.25, Table 4.26 and Table 4.27. Table 4.28 determines the time required to perform the various TOs for THS, RGB, TAW, PSE and ATR. While Table 4.29 determines the time required to perform the various TOs for DBH, CSS, SGT, ALI, I10 and I75. And lastly, Table 4.30 determines the time required to perform the various TOs for S35, SGE, S34, I17, STL and RGT.

The TOs at each phenological stage is considered to be one activity, i.e. labourers walk through the vineyard once to perform the specified TOs. Thus, the TO in the group that requires the most time is selected to determine the time required to complete the TOs at the specific phenological stage. The selected time for the TMR step is presented in the hours/ha row underneath the variety name. The deciphered TMRs for each variety is discussed in section 4.3. The total labour hours required to complete the TMR for each variety is multiplied with an assumed hourly wage rate of R18,50 and divided by the expected yield per annum. Therefore, in section 4.4 the total labour hours required per variety considers the vine's age and actual yield percentage. While in Table 4.12, the total labour cost required per 4,5kg equiv. cartons do not consider the age of the vine, but rather assumes the vine is in full production.

4.2.5 Chemical hormone cost (Rand per 4,5kg equiv. carton)

The cost of chemical hormone regulators for each variety was also calculated with the technical approach described in section 3.7. The TMR encoded into table 3.11 was deciphered into Table 4.25, Table 4.26 and Table 4.27 to provide an accurate cost estimate for the various chemical regulators at each TMR step. The cost of each chemical application, discussed in section 3.5, is adhered to the abbreviations in Table 4.25, Table 4.26 and Table 4.27 and expressed in Table 4.31, Table 4.32 and

Table 4.33. In Table 4.31, the chemical cost for the TOs in the different TMRs of THS, RGB, TAW, PSE and ATR are tabulated. In Table 4.32, the chemical cost for the TOs in the different TMRs of DBH, CSS, SGT, ALI, I10 and I75 are presented. And in Table 4.33 the chemical cost for the TOs in the different TMRs of S35, SGE, S34, I17, STL and RGT are presented. The total chemical cost at each phenological stage is the sum of all the chemical substances used plus an additional tractor fee of R350. The total chemical hormone cost is divided by the expected yield to determine the chemical hormone cost per 4,5kg equiv. carton for each variety in Table 4.12. While in section 4.4, the total chemical hormone cost in the enterprise budgets considers the variety and block size.

4.3 The quantitative outcome of the technical management routes

The TMRs for the seventeen varieties prearranged in table 3.11 are interpreted below. The quantitative output of table 3.11 is summarised in Table 4.34 below. Two well-known varieties, THS and RGT, will be discussed separately in section 4.3.1 to indicate the differentiating factors. There are a couple of similarities in the TMRs among the varieties, which are discussed in section 4.3.2 from the perspective of three phenological stages, namely, shoot growth, flowering, fruit set, berry growth and véraison.

4.3.1 Technical management routes for Thompson Seedless and Regal Seedless

The first variety, Thompson Seedless (THS), is a highly labour-intensive variety. THS requires attentive work and chemical regulators at numerous phenological stages. There are only two varieties in the study that do not require chemical hormone applications, namely, Regal Seedless (RGT) and Dan Ben Hannah (DBH). The outcome of the TMR for RGT is discussed below.

4.3.1.1 Thompson Seedless (THS)

The canopy management strategy for THS is presented in Figure 4.10. THS requires pruning in week 27, which takes 59 hours per hectare (h/ha). When the shoot length is 20-30cm weak, double and shoots without bunches must be removed, which takes 98h/ha. Shortly thereafter, when shoot length is 60-80cm, shoots must be spaced and side shoots up to the bunch must be removed, which takes 101h/ha. In the fourth TMR step, before flower, bunches are neatly hung through the trellis and poor and weak bunches are removed. More importantly, the 10ppm GA_3 is sprayed to induce berry shatter. Thus, the fourth TMR step requires 149h with a chemical cost of R586,80 per hectare. When flower is at 50% and 80% 10ppm GA_3 is sprayed in a time of 2h and at a cost of R681,80. After fruit set, in a time of 111h/ha, the crop load is thinned to 5/4 of the production capacity. When 50% of the berries are 4-5mm in diameter vines are girdled and sprayed with 10ppm GA_3 in a total time of 67h/ha and with a cost of R681,80/ha. When 75% of the berries are 4-5mm in diameter the vines are sprayed in 2h/ha with 2ppm CPPU and 10ppm GA_3, which cost R1427,80/ha. Vines are sprayed in 2h with 2ppm GA_3 at

a cost of R681,80 per hectare. When berries are 6-7mm in diameter, bunches should be shortened, tied-up and the crop load should be thinned in a time of 172h/ha. Shortly thereafter, compact bunches should be loosened, and shoulders should be lifted in a time of 680h/ha.

4.3.1.2 Regal Seedless (RGT)

The canopy management strategy imposed on Regal Seedless is presented in Figure 4.11. The variety is sensitive to any chemical hormone regulators, therefore, requires attentive management to ensure bunches are not to compact. Data was available to determine the labour hours to perform the various actions on RGT. The sequence of events and time to complete the various manipulation actions are presented in Figure 4.10: The TMR for THS from week 27 to 52

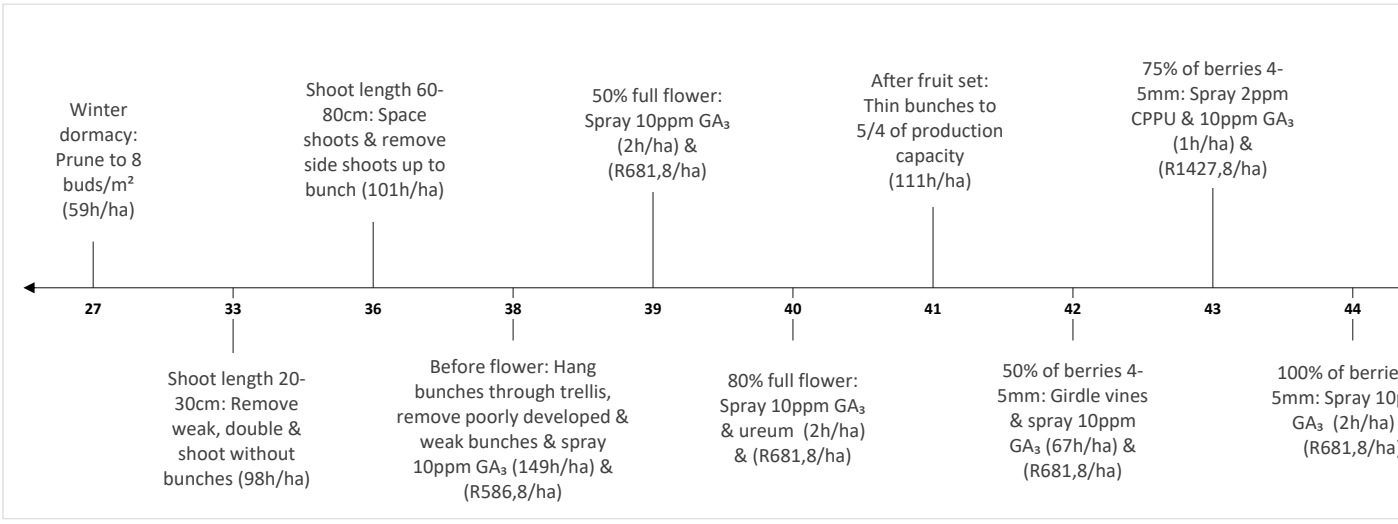


Figure 4.11. The time required to complete winter pruning on RGT is 59h/ha. When shoots are 20-30cm, double and week shoots are removed in 98h/ha. Thereafter, when shoots have grown to a length of 40-60cm, shoots are tied and spaced in 101h/ha. Bunch manipulation starts when flowering commences. The cluster flowers are topped to improve fruit set in 67h/ha. After fruit set, the bunch is further shortened if necessary and leaves around the bunch are removed in 149h/ha. When berries have grown to 5-6mm, the bunches are trimmed, loosened and thinned in 680h/ha. The final manipulation action is another bunch loosening exercise, which is performed in 608h/ha when berries are 8-10mm.

4.3.2 Similarities in the TMRs among the seventeen varieties

The outcome of the TMRs encoded in table 3.11 is presented in Table 4.34. The quantifiable outcome of each TMR will be discussed below in five phenological stages namely, shoot growth, flowering, fruit set, berry growth and véraison. The similar actions performed on the varieties during these phenological stages are discussed below.

4.3.2.1 Shoot growth

All the varieties are pruned in 59 hours per hectare(h/ha) during winter dormancy. When the first two to three leaves emerge only PSE is sprayed with ureum, which takes 1,5h and costs R445/ha. When shoot growth commences and the shoots reach a length of 20-30cm, the vines are manipulated for the first time. Weak, double, suckers and shoots without bunches are removed in 20-30m shoot length phenological stage in 98h/ha. These TOs are performed on all the varieties except I10, I17 and I75. In the following growth phase, when shoots are 60-80cm in length, the shoots of all the varieties in the study are spaced, tied and weak shoots are removed in 101h/ha. Except for PSE and CSS, which require 126h/ha and 139h/ha to complete the required TOs in the 60-80cm phenological stage, respectively.

Figure 4.10: The TMR for THS from week 27 to 52

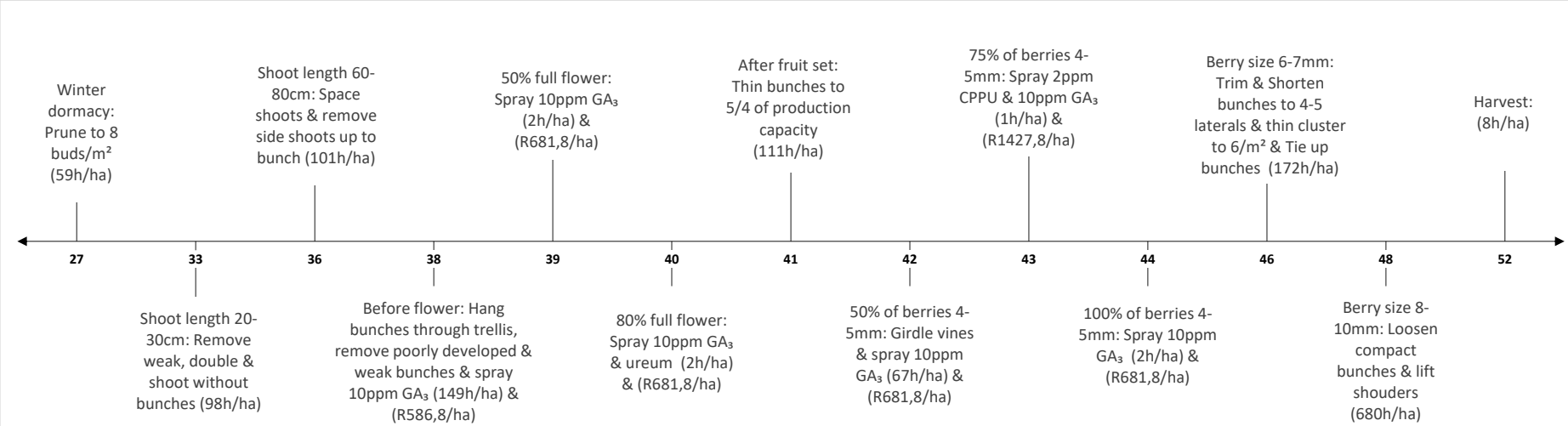
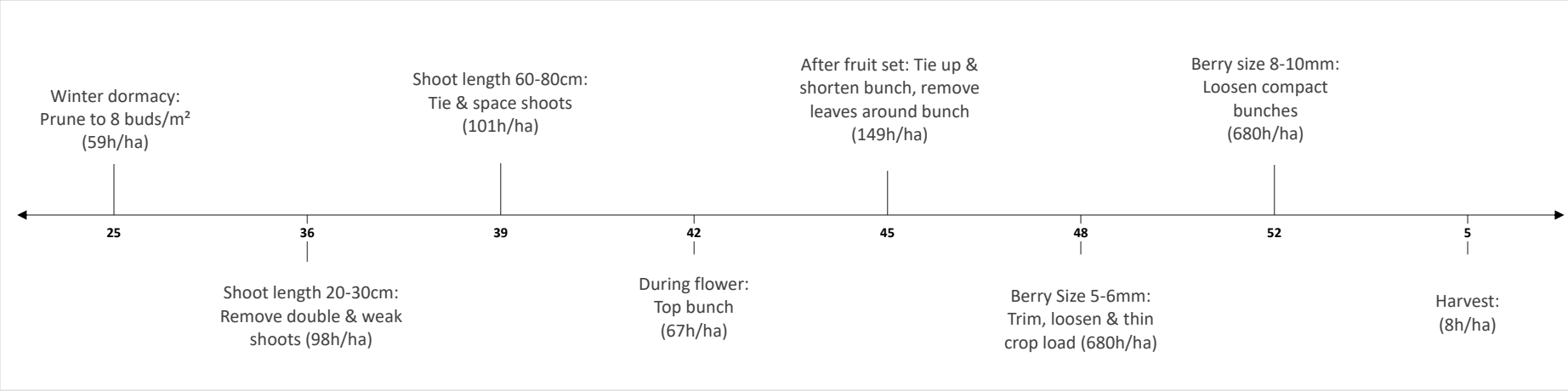


Figure 4.11: The TMR for RGT from week 25 to 5



4.3.2.2 Flowering

When the reproductive phase starts, all the varieties require attentive work. Before flowering, the crop load is thinned, laterals in the bunch and leaves around the bunch are removed, and bunches are hung through the trellis in 149h/ha for RGB, TAW, ATR, DBH, CSS, SGT, S35, SGE and S34. These TOs are performed in the same time on THS, ALI and I10. However, THS 10ppm GA_3 and ureum is sprayed on THS at a cost of R568,8/ha, well only an ureum application at a cost of R445/ha is required for ALI and I10. Ureum is also sprayed on I75, however, I75 does not require any bunch manipulation before flowering. Before flowering, the crop load for STL is thinned in 176h/ha. There is high chemical cost charge of R2485 on STL before flowering due to an ureum spray and an additional nitrogen application. RGT is not manipulated or treated with chemical hormones before flowering.

During flowering, numerous different TOs are performed on THS, PSE, ATR, DBH, SGT, S34, STL and RGT. PSE is sprayed twice with 10ppm GA_3 at a cost of R681,80/ha each time. The shoulders of ATR bunches are shortened in a time of 67h/ha. While DBH vines are girdled and shoots are tipped in a time of 98h/ha. SGT bunches are dipped in in34ppm CPPU in a time of 34h/ha at the cost of R1191/ha during 50% flower and again during 80% flower. The shoots and bunches are tipped and leaves around bunches are removed for S34 in 149h/ha, thereafter the vines are sprayed with 1ppm CPPU at a cost of R770,50/ha. Well only the bunches of RGT are tipped in 67h/ha.

4.3.2.3 Fruit set

At the start of fruit set, PSE vines are sprayed with 1,5ppm GA_3 at a cost of R480,52/ha in two application within two days from one another. STL requires 1,5ppm GA_3 with ureum, therefore, spray costs for STL during fruit set is R480,085. During flowering, TAW and I17 are sprayed with 1ppm GA_3 at a cost of R376,60/ha. While ALI and SGE require 1ppm GA_3 with an ureum application at a cost of R468,68/ha. The crop load of I10 is thinned in 98h/ha during fruit set. I17 requires a 15ppm GA_3 dip application, which costs 34h/ha and at costs of R705,20. During flowering, the leaves around CSS clusters are removed and the clusters are trimmed and shortened in a time of 178h/ha. After fruit set, the crop load for THS is thinned in 111h/ha. The time required to thin, shorten and remove leaves around bunches for RGB, ATR, SGT and ALI are 172h/ha. While similar TOs performed on TAW, DBH, I10, I75, S35 and RGT only requires 149h/ha and 178h/ha on CSS.

4.3.2.4 Berry growth

When berries are 2 to 4mm in diameter, I17 vines are girdled in 67h/ha. Ureum and 2ppm GA_3 is sprayed on SGE at a cost of R493,36/ha, while I75 clusters are dipped in 15ppm GA_3 at a cost of R705,20/ha in a time of 34h/ha. When 50% of the berries are 2-5mm in diameter, THS vines are girdles and sprayed with 10ppm GA_3 in 67h/ha at a cost of R681,80/ha. Shortly thereafter, when 75% of the

berries are 4-5mm in diameter, THS vines are sprayed with 2ppm CPPU and 10ppm GA_3 at a cost of R1427,80/ha. When 100% of the berries are 4-5mm in diameter, 10ppm GA_3 is sprayed on THS vines at a cost of R681,80/ha and CSS vines are girdled in 67h/ha.

When berries are between 5 and 8mm, THS, RGB, TAW, DBH bunches are trimmed, shortened, tied, and thinned in 172h/ha. TAW also requires 10ppm GA_3 at a cost of R568,80/ha. While the time to complete these tasks for PSE, STL, ALI is 111h/ha. ALI also requires 2ppm GA_3 at a cost of R397,36/ha. In the 5-8mm diameter phase S35 and RGT bunches are trimmed, loosened and thinned in 680h/ha. S35 can require two loosening TOs shortly after one another. The crop load for I17 and SGE is thinned in 98h/ha. SGE requires 2ppm GA_3 spray application at a cost of R397,36 during the 5-8mm berry diameter phase. While I75 bunches are topped in this phase in a time of 67h/ha and I10 bunches are dipped in 15ppm GA_3 and 1ppm CPPU in a time of 34h/ha at a cost of R1125,70. SGT only requires a 5ppm GA_3 spray application at a cost of R468,40 in the 5 to 8mm diameter berry growth phase.

When berries are between 8 and 10mm, THS, TAW, I17 and SGT bunches are loosened in 680h/ha. S35 vines are girdled when berries are 8-9mm and sprayed with 1,5ppm CPPU with ureum in a time of 67h/ha at a cost of R1549,35/ha. I17 require leave break when berries are 9-12mm, which takes 90h/ha. STL bunches are dipped in 15pppm GA_3 in a time of 34h/ha at a cost of R705,20. I17 grapes are dipped in 1ppm CPPU and 10ppm GA_3 in a time of 34h/ha and a cost of R1007,30/ha. In the same berry growth period, 8 to 10mm, the crop load of I75 is thinned in 98h/ha. PSE vines are sprayed with 5ppm GA_3 at a cost of R468,40/ha. S34 and ATR bunches are tied up in 89h/ha. ATR vines are also sprayed with 2ppm GA_3 at a cost of R397,36/ha. In the 8-10mm diameter berry size phase, CSS bunches are thinned, trimmed, and dipped in 7,5ppm GA_3 and the vines are sprayed with ureum, which requires 172h/ha with a chemical cost of R622,60/ha. When berries are 10 to 15mm in diameter, the final bunch preparation is performed on PSE, ATR, SGE and DBH in 172h/ha. The bunches of STL are loosened and trimmed in final preparation in 477h/ha. The final bunch preparation for RGB bunches is only during véraison. The RGB bunches are dipped in 20ppm GA_3 in a time of 34h/ha at a cost of R823,6/ha before véraison when berries are between 10-15mm in diameter.

4.3.2.5 Véraison

The final bunch preparation, in a time of 172h/ha, is only performed on RBG when véraison is already 10%. The canopies of CSS vineyards must be opened up at 5% véraison, which takes 149h/ha. The second leaf break is performed for I17 in a time of 74h/ha when véraison is at 5%. During véraison, TAW bunches are dipped in a 40ml/100ml ethephon to water concentration in a time of 34h/ha at a cost of R1230/ha. The same ethephon concentration is sprayed on SGE in two applications. While I75 and CSS bunches are sprayed with a 45ml/100ml ethephon concentration at a cost of R1340/ha. The

ethephon concentration sprayed on ATR is only 25ml/100ml, thus the chemical regulator cost is R900/ha. SGT cluster are dipped in 30ml/100ml ethephon, however, requires the removal of leaves, thus the TOs take 149h/ha to complete at a cost of R1010/ha.

4.4 Variety performance with two farm scenarios

In the following section, the significance of each variable presented in Section 4.1 is determined. The importance of each variable is directly influenced by the selected variety. Thus, incomprehension with other varieties the most significant variable is determined.

To be able to relate the various factors to each other and the whole farm system two farms are simulated. The aim is to measure the effect of each variable on profitability. The farms represent typical farms for the Berg river area but only serve to illustrate the use of the detailed financial planning models. For the initial phase, the total area contribution of each variety is 1 ha. This is done only to illustrate how the various activities associated with the production of each variety interact and affect total farm financial performance. The values of the five-variable discussed above, namely, yield, price, royalties, labour and chemical hormone costs are used in various enterprise budgets to determine the profitability measured in internal rate of return (MIRR) for twenty vineyard blocks in two different farm simulation scenarios. This is closer to the MIRR (modified MIRR) which does allow for the measurement of profitability over a longer period without taking into consideration the full investment requirement up front. This is done because the land value and value invested will not affect the outcome in terms of identifying the value of the contribution of the key variables. Factors left out of the equation thus include land value, overhead and fixed cost and total machinery requirement. These factors are unlikely to be influenced by the specific cultivar selected in terms of the aforementioned factors. The enterprise budgets indicate the change in cash flow when a vineyard block is re-established with a new variety. The twenty enterprise budgets for Farm A are presented in the Annexure from Table 4.45 to Table 4.64 and the enterprise budgets for Farm A are presented in the Annexure from Table 4.77 to Table 4.96.

The variety portfolio of both farms in 2020 is the same and the change in varieties over fifteen-years occurs in the same year. Therefore, the other production cost and re-establishment cost are the same for each block in the two farm scenarios. Thus, the earnings before interest, tax, depreciation and amortisation (EBITDA) between the two farms for each enterprise block is due to a change in the five variables. For discussion purposes, the relevant information in each enterprise budget is summarised in groups of four in the appendix. The summary of the first 4 Block enterprises for Farm A is presented in Table 4.39, Block 5 to 8 in Table 4.40, Block 9 to 12 in Table 4.41, Block 13 to 16 in Table 4.42 and

Block 17 to 20 in Table 4.43. The summary of the enterprise budgets for Farm A is presented in the same block breakdown in Table 4.71, Table 4.72, Table 4.73, Table 4.74 and Table 4.75.

The twenty enterprise budgets are used to compile a capital flow budget for each farm respectively. The objective of the study is to determine the impact on profitability when a vineyard is re-established and not of an entire farm. The MIRR (internal rate of return on capital investment) is used to allow for the long-term nature of table grape production. Thus, the MIRR of only the enterprise budgets are relevant for research purposes. There is a difference between the performance of Farm A and Farm B. The MIRR of Farm A and Farm B is -7% and -1%, respectively. Both farms have the same annual establishment cost. However, Farm A only emerges out of the negative cash flow in year 2030, while Farm A is one year ahead and has a positive turn-over from year 2029 onwards. Thus, the difference in income (EBITDA) in the capital flow budgets for Farm A and Farm demonstrate the financial consequences when less profitable varieties are selected.

Each farm is simulated in the farm simulation variety sensitivity matrix in Table 4.4. Both farms have the same variety portfolio in 2020 and all the blocks are 1ha in size. All the blocks are replaced with a new variety at the same time for each farm within a 15 years period. However, to measure the difference in MIRR when different varieties are selected, the varietal change on Farm A and B is entirely different. The two MIRR values are presented in Table 4.15 for each block.

4.4.1 Internal Rate of return

The change in the financial performance of each block in the two-farm scenario show some interesting points. Both simulated farms start with the same variety portfolio but deviate from one another by selecting different varieties to re-establish new vineyards. The current table grape variety portfolio consists of 10 varieties, namely, THS, RGB, TAW, PSE, DBH, RGT, CSS, ATR, SGT and STL. While the future variety portfolio for Farm A and B is extended to 17 varieties to determine numerous MIRR relationships. The results are presented in Table 4.4 and discussed below. The discussion of the numerous MIRR results will be discussed from the perspective of the current variety portfolio, i.e. all the current blocks with the same variety are grouped together in group 1 to 10. The discussion will explain both farms simultaneously to measure more varieties against one another. The current block situation will be considered when the MIRR for the block over a fifteen-year period is discussed. The age performing indicator, presented in the appendix in Table 4.36 for Farm A and Table 4.68 for Farm A will be referred to in the discussion regarding the current block situation.

Table 4.14: Farm scenarios variety portfolio sensitivity portfolio matrix

Current variety portfolio						Future variety portfolio					
						Farm A			Farm B		
Block no.	Block size	Variety	Variety group	Year planted	Year re-establish	Variety	Variety group	IRR	Variety	Variety group	IRR
1	1	THS	WS	2013	2027	I75	RS	51%	ALI	RS	62%
2	1	RGB	RG	2004	2028	PSE	WS	11%	I10	WS	15%
3	1	TAW	RS	2010	2026	ALI	RS	76%	I75	RS	74%
4	1	PSE	WS	2006	2029	ATR	BS	98%	S34	BS	98%
5	1	THS	WS	2004	2025	RGT	WS	18%	CSS	RS	-100%
6	1	DBH	BG	2014	2030	I10	WS	9%	RGT	WS	1%
7	1	RGT	WS	2000	2024	DBH	BG	2%	RGB	RG	42%
8	1	CSS	RS	2003	2023	SGE	RS	14%	ALI	RS	41%
9	1	ATR	BS	2011	2023	I10	WS	51%	I17	BS	45%
10	1	THS	WS	2008	2025	STL	RS	35%	S35	WS	44%
11	1	RGB	RG	1999	2022	CSS	RS	-100%	SGE	RS	13%
12	1	CSS	RS	2006	2028	S35	WS	16%	THS	WS	-100%
13	1	ATR	BS	2018	2026	PSE	WS	33%	S35	WS	34%
14	1	THS	WS	2001	2029	I17	BS	-100%	I10	WS	8%
15	1	DBH	BG	2006	2022	SGT	BS	28%	PSE	WS	36%
16	1	PSE	WS	2003	2021	THS	WS	27%	S35	WS	39%
17	1	SGT	BS	2013	2026	RGB	RG	61%	THS	WS	62%
18	1	RGT	WS	2014	2025	TAW	RS	71%	I17	BS	70%
19	1	STL	RS	2013	2028	I10	WS	98%	SGT	BS	96%
20	1	DBH	BG	2011	2022	S34	BS	9%	TAW	RS	24%

4.4.1.1 Group 1: THS

In the current variety portfolio, THS is cultivated on Block 1, Block 5, Block 10, and Block 14.THS on Block 1 is replaced with I75 in Farm A and ALI in Farm A in year 2027, which generates a MIRR of 51% and 62% respectively. THS on bock 1 is in full production in the years prior to the re-establishment, with an R5474,77 EBITA. After the re-establishment both blocks generate a positive EBITDA in the fourth production year.

The THS on Block 5 is replaced in 2025 with RGT in Farm A and CSS in Farm A, which generates a MIRR of 18% and -100%, respectively. In 2020, the current THS vineyard is old and only yields 75% of the total yield, which reduces to 66% in 2022. THS that is not in full production produces a negative EBITDA. Farm A manages to resurrect the negative cash flow four years after RGT is planted, while the cash flow for Farm A remains negative even with CSS in full production in 2034.

The THS vineyard on Block 10 is also replaced in 2025, although with STL and S35, which generates a MIRR of 35% and 44% respectively. THS is still in full production in 2020 and 2021, thus the cash flow before the re-establishment was positive, but only with R5 474,77. After the re-establishment of THS with STL on Farm A in 2023, the block only generates a positive cash flow in 2029, while S35 already generates a positive cash flow in 2028.

Lastly, the THS on Block 14 is replaced with I17 in Farm A and I10 in Farm A in 2029, which generates a MIRR of -100% and 8% respectively. The cash flow for Block 14 is already negative in the year 2020 due to the old THS vineyards that are not in full production. Farm A is unable to resurrect the negative

cash flow with I75, which is a non-profitable variety, even when in full production. While the I75 cultivated on Farm A on Block 14, already generates a positive EBITDA with only a 70% in year 2032.

4.4.1.2 Group 2: RGB

RGB is cultivated on Block 2 and Block 11. RGB on Block 2 is replaced with PSE in Farm A and I10 in Farm A in 2028, which generates a MIRR of 11% and 15%, respectively. The RGB vineyard produces a negative EBITA from 2020 when production capacity is 75%. In both farm scenarios, the new established vineyards on Block 2, PSE in Farm A and I10 in Farm A, produce a positive cash flow from the year 2031, when the vineyards only yield 70% of the total production capacity.

The RGB on Block 11 is replaced with CSS in Farm A and SGE in Farm A in 2022, which generates a MIRR of -100% and 13%, respectively. RGB that is not in full production does not generate a positive cash flow, thus the RGB vineyard is already unprofitable in 2020 when production is 66% of the total production capacity. The situation is not improved with the unprofitable CSS variety in Farm A. While SGE in Farm A produces a positive cash flow when the vineyard is in full production in 2026.

4.4.1.3 Group 3: TAW

TAW is cultivated on Block 3 and replaced with ALI in Farm A and I10 in Farm A, which generates a similar MIRR of 76% and 74%, respectively.

4.4.1.4 Group 4: PSE

PSE is cultivated on Block 4 and Block 16. The PSE vineyard on Block 4 is replaced in 2029 with ATR and S34, both varieties generate a MIRR of 98%. TAW on Block 3 is in full production from 2020 to 2024 and only in 75% in 2025. The TAW vineyard is profitable in all these years, thus the MIRR is very high in both farm scenarios. Both PSE and ATR are profitable vineyards when the vineyard is only in 70% production, thus the MIRR of exceptionally high for Block 4.

The PSE vineyard on Block 16 is replaced with THS in Farm A and S35 in Farm A in 2021, which generates a MIRR of 27% and 39%, respectively. PSE is profitable in the year before the re-establishment when production is at 75% of the vineyard's capacity. The THS vineyard planted in Farm A is profitable one after THS is at 100% production capacity due to the last instalment payment. While S35 is already profitable in 2024 when production capacity is at 70%.

4.4.1.5 Group 5: DBH

DBH is cultivated on Block 6, 15 and 20 in the current variety portfolio. The price for DBH in Block 6 and 20 is R97,47 per 4,5kg carton. Thus, even in full production, the two blocks are not profitable. While the price for DBH on Block 15 is R129,30, which generates an EBITA of R54 945 which is R109144,29 per hectare more than Block 20 when both blocks are in full production.

DBH on Block 6 is replaced with I10 in Farm A and RGT in Farm A in 2030, which generates a MIRR of 9% and 1% respectively. The low MIRR values are due to a long unprofitable time period, furthermore I10 on Farm A produces a profitable turnover from 2033 onwards, while RGT on Farm A only produces a positive EBITDA in 2034.

The DBH on Block 15 is replaced with SGT and PSE in early in the study, 2022, which generates a MIRR of 28% and 36%, respectively. The EBITDA for Block 15 in Farm A re-established with PSE is already positive in 2025 when PSE the production capacity is only 70%., While similar to THS, SGT first has one instalment to cover when production is at 100% capacity. Therefore, EBITA for Block 15 in Farm A is only positive in 2029, when production is at a 100% capacity for the second year.

DBH on Block 20 is also replaced in 2022 with S34 in Farm A and TAW in Farm A, which generates a MIRR of 9% and 24%, respectively. In Table 4.64, there is a notable positive EBITDA of R1 115,92 in 2026, when production capacity is 100% for the first time, however, the instalment cost increases annually, thus the following two years EBITA is negative and only in 2029 is the cash flow is positive and stable. Block 20 in Farm A is therefore only profitable in 2029, which is the eight years after the DBH was re-established with S34. While Block 20 in Farm A, with a new TAW vineyard, is profitable in 2026 when production is 100% capacity for the first time.

4.4.1.6 Group 6: RGT

RGT cultivated on Block 7 and Block 18 in the current variety portfolio. RGT on Block 7 is replaced in 2024 with DBH in Farm A and RGB in Farm A, which generates a MIRR of 2% and 42%, respectively. RGT on Block 7 is an old vineyard which yields only 66% of the variety's potential. Before re-establishment, in 2020, 2021, 2022 and 2023, the vineyard generates a positive EBITA of on R294,38. In Farm A, the vineyard is re-established with DBH, which is not profitable at a price of R94,48 per 4,5kg carton, therefore MIRR is only 2%. The same situation is presented in Farm A with RGB that only obtains a price of R105,11 per 4,5kg carton.

The RGT vineyard on Block 18 is replaced in 2025 with TAW in Farm A and I17 in Farm A, which generates a MIRR of 71% and 70%, respectively. RGT on Block 18 yields 100% of the variety's production capacity until the vineyard is re-established in 2025. In Farm A TAW produces a positive cash flow in the year 2028 already. While in Farm A, the new established I17 vineyard remains unprofitable, even after the instalment payments end in 2031 (see Table 4.94).

4.4.1.7 Group 7: CSS

In the current variety portfolio CSS on Block 8 and Block 12. CSS on Block 8 is replaced in 2023 with SGE in Farm A and ALI in Farm A, which generates a MIRR of 14% and 41%, respectively. CSS is not profitable. Therefore, EBITDA is negative until SGE is in 100% production in Farm A in 2027. While only 70% production capacity is required for ALI to resurrect the cash flow, which is accomplished in 2026

CSS on Block 12 is replaced in 2028 with S35 in Farm A and THS in Farm A, which generates a MIRR of 16% and -100%, respectively. Although S35 produces a positive cash flow four years after establishment when production capacity is 70%. Block 12 is only re-established in 2027, thus only in 4 of the 15 years, is a positive EBITDA generated on Block 12 in Farm A. While the new established THS in Farm A on Block 12, is unable to generate an income large enough to cover the final instalment in 2034, hence the -100% MIRR.

4.4.1.8 Group 8: ATR

In the current variety portfolio, ATR is cultivated on Block 9 and Block 13. Both vineyards are still in 100% production until each block is re-established. ATR on Block 9 is replaced in 2023 with I10 in Farm A and with I17 in Farm A, which generates a MIRR of 51% and 45%, respectively. In Farm A, I10 generates a positive EBITA in 2026 when production capacity is only 70%. While Block 9, does not generate a positive EBITA, even when I17 is in 100%. Therefore, the high MIRRs are due to positive effect ATR had on the vineyard block's financial history.

The ATR on Block 13 is removed while still in full production in 2026 with PSE in Farm A and S35 in Farm A, which generates a MIRR of 33% and 34% respectively. ATR is only in 30% production in 2020, 70% production in 2021 and in 100% production in 2022,2023, 2024 and 2025. Thus, the vineyard only generates a positive EBITDA from 2022 to 2025. The new established PSE and S35 vineyard in Farm A and Farm B, respectively, already generate a positive EBITDA when production is 70% of the vineyards production capacity in 2029. The MIRR is very similar although the income generated by PSE and S35 differs with approximately R100 000, in S35's favour. The similarity in MIRR could be due to the short production period of the new varieties.

4.4.1.9 Group 9: SGT

SGT is cultivated on Block 17 in the current variety portfolio and replaced in 2026 with RGB in Farm A and THS in Farm A, which generates a MIRR of 61% and 62% respectively. SGT is in full production until the vineyard in re-established in 2026. The new RGB vineyard established in Farm A on Block 17 generates a negative EBITDA for the remaining years. While THS only generates a positive EBITDA of R5 474,77 in 2033 and 2034. Thus, the high MIRR is due to the financial contribution of SGT in the years prior to the re-establishment.

4.4.1.10 Group 10: STL

On Block 19, STL is replaced in 2028 with I10 in Farm A and with SGT in Farm A, which generates a MIRR of 98% and 96%, respectively. STL yields 100% of the total production capacity until the vineyard is re-established in 2028. The slightly higher MIRR in Farm A is due to I10, which generates a positive EBITDA when the vineyard is only in 70% production in 2031. While SGT is unable to produce positive EBITDA before all the instalments are not paid for. Thus, the largest contributor to Block 19's MIRR is from STL in the years prior to the re-establishment.

4.4.2 The significant variable

The extended decision criteria in Table 4.17 includes the MIRR for each block and indicates which variety in either the current, Farm A and Farm B variety portfolio performed the best in each of the five variables discussed above in section 4.2. The five variables are considered to provide a more in-depth explanation for the MIRR achieved in Farm A and Farm B. The purpose of the discussion of Table 4.17 is to indicate what are the variables that influence profitability.

All the new varieties planted have a higher potential yield, except on Block 6 in Farm A and Block 17 in Farm A (In Farm A on block B, RGT produces a high yield of 4955, while bock 17 in Farm A produces a yield of 4086.). The highest MIRR per block was achieved for the farm that planted the variety that produces the largest yield. Although not as much as yield, price per 4,5kg carton contributes to MIRR. In 10 different blocks, the variety with the highest price in the current, Farm A and Farm B variety portfolio is considered the more financial influential variety cultivated on the block. The royalty-bearing cost per variety seems to have an insignificant effect on longer-term profitability for each block. The significance of royalty costs on MIRR would require more specialised programming. From the perspective of EBITDA, the royalty cost per variety is insignificant due to the large yields and higher prices, especially for ALI, I10, PSE, S35 and STL. The royalty cost could however be significant when registered varieties such CSS, I75, I17, SGE, SGT and TAW compete for selection based on a price factor against non-registered varieties, namely, THS, RGB and RGT. Thus, if the PIB for a variety is below ±R125, royalty-bearing varieties would reduce MIRR. The labour cost per 4,5kg carton varies with ±R1,50 to R3,00 between the varieties, while chemical cost per 4,5kg cartons could vary with ±R1,00 per variety. Thus, labour and chemical hormone cost would only be considered relevant to varietal selection if the prices and yield for the different varieties were the same.

Table 4.15: Variety sensitivity analysis within farm scenarios

Block no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current	THS	RGB	TAW	PSE	THS	DBH	RGT	CSS	ATR	THS	RGB	CSS	ATR	THS	DBH	PSE	SGT	RGT	STL	DBH
Yield (4,5kg/ha)	2898	2930	5144	4098	2898	3180	4955	3041	3259	2898	2930	3041	3259	2898	3180	4098	4086	4955	4469	3180
Price (R/4,5kg carton)	R129,30	R105,11	R101,58	R158,24	R129,30	R94,98	R113,75	R110,88	R135,16	R129,30	R105,11	R110,88	R135,16	R129,30	R94,98	R158,24	R105,92	R113,75	R134,20	R94,98
Royalties (R/4,5kg carton)	R0,00	R0,00	R9,73	R9,68	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R9,68	R6,77	R0,00	R8,75	R0,00
Labour cost (R/4,5kg carton)	R9,26	R6,10	R5,22	R6,11	R9,26	R5,85	R6,88	R7,30	R5,20	R9,26	R6,10	R7,30	R5,20	R9,26	R5,85	R6,11	R3,65	R6,88	R4,54	R5,85
Chemical cost (R/4,5kg carton)	R1,64	R0,28	R0,43	R0,46	R1,64	R0,00	R0,00	R0,65	R0,40	R1,64	R0,28	R0,65	R0,40	R1,64	R0,00	R0,46	R0,94	R0,00	R1,13	R0,00
Farm A	I75	PSE	ALI	ATR	RGT	I10	DBH	SGE	I10	STL	CSS	S35	PSE	I17	SGT	THS	RGB	TAW	I10	S34
Yield (4,5kg/ha)	5347	4098	5370	3259	4955	4796	3180	4627	4796	4469	3041	5246	4098	3529	4086	2898	2930	5144	4796	4269
Price (R/4,5kg carton)	R117,35	R158,24	R223,29	R135,16	R113,75	R154,61	R94,98	R102,92	R154,61	R134,20	R110,88	R147,83	R158,24	R102,33	R105,92	R129,30	R105,11	R101,58	R154,61	R102,33
Royalties (R/4,5kg carton)	R9,20	R9,68	R13,89	R0,00	R0,00	R9,95	R0,00	R7,60	R9,95	R8,75	R0,00	R10,01	R9,68	R5,87	R6,77	R0,00	R0,00	R9,73	R9,95	R5,87
Labour cost (R/4,5kg carton)	R1,92	R6,11	R5,85	R5,20	R6,88	R2,31	R5,85	R2,07	R2,31	R4,54	R7,30	R7,02	R6,11	R7,07	R3,65	R9,26	R6,10	R5,22	R2,31	R4,33
Chemical cost (R/4,5kg carton)	R0,60	R0,46	R0,24	R0,40	R0,00	R0,33	R0,00	R0,83	R0,33	R1,13	R0,65	R0,30	R0,46	R0,52	R0,94	R1,64	R0,28	R0,43	R0,33	R0,18
IRR	51%	11%	76%	98%	18%	9%	2%	14%	51%	35%	-100%	16%	33%	-100%	28%	27%	61%	71%	98%	9%
Farm B	ALI	I10	I75	S34	CSS	RGT	RGB	ALI	I17	S35	SGE	THS	S35	I10	PSE	S35	THS	I17	SGT	TAW
Yield (4,5kg/ha)	5370	4796	5347	4269	3041	4955	2930	5370	3529	5246	4627	2898	5246	4796	4098	5246	2898	3529	4086	5144
Price (R/4,5kg carton)	R223,29	R154,61	R117,35	R102,33	R110,88	R113,75	R105,11	R223,29	R102,33	R147,83	R102,92	R129,30	R147,83	R154,61	R158,24	R147,83	R129,30	R102,33	R105,92	R101,58
Royalties (R/4,5kg carton)	R13,89	R9,95	R9,20	R5,87	R0,00	R0,00	R0,00	R13,89	R5,87	R10,01	R7,60	R0,00	R10,01	R9,95	R9,68	R10,01	R0,00	R5,87	R6,77	R9,73
Labour cost (R/4,5kg carton)	R5,85	R2,31	R1,92	R4,33	R7,30	R6,88	R6,10	R5,85	R7,07	R7,02	R2,07	R9,26	R7,02	R2,31	R6,11	R7,02	R9,26	R7,07	R3,65	R5,22
Chemical cost (R/4,5kg carton)	R0,24	R0,33	R0,60	R0,18	R0,65	R0,00	R0,28	R0,24	R0,52	R0,30	R0,83	R1,64	R0,30	R0,33	R0,46	R0,30	R1,64	R0,52	R0,94	R0,43
IRR	62%	15%	74%	98%	-100%	1%	42%	41%	45%	44%	13%	-100%	34%	8%	36%	39%	62%	70%	96%	24%

Table 4.16: The best performing value per factor for each block

Block no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Yield (4,5kg/ha)	5370	4796	5370	4269	4955	4955	4955	5370	4796	5246	4627	5246	5246	4796	4098	5246	4086	5144	4796	5144
Price (R/4,5kg carton)	R223,29	R158,24	R223,29	R158,24	R129,30	R154,61	R113,75	R223,29	R154,61	R147,83	R110,88	R147,83	R158,24	R154,61	R158,24	R158,24	R129,30	R113,75	R154,61	R102,33
Royalties (R/4,5kg carton)	R0,00	R0,00	R9,20	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R0,00	R6,77	R0,00
Labour cost (R/4,5kg carton)	R1,92	R2,31	R1,92	R4,33	R6,88	R2,31	R5,85	R2,07	R2,31	R4,54	R2,07	R7,02	R5,20	R2,31	R3,65	R6,11	R3,65	R5,22	R2,31	R4,33
Chemical cost (R/4,5kg carton)	R0,24	R0,28	R0,24	R0,18	R0,00	R0,00	R0,00	R0,24	R0,33	R0,30	R0,28	R0,30	R0,30	R0,33	R0,00	R0,30	R0,28	R0,00	R0,33	R0,00
IRR	62%	15%	76%	98%	18%	9%	42%	41%	51%	44%	13%	16%	34%	8%	36%	39%	62%	71%	98%	24%

Table 4.17: Extended decision criteria

Block no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Yield (4,5kg/ha)	ALI	I10	ALI	S34	RGT	RGT	RGT	ALI	I10	S35	SGE	S35	S35	I10	PSE	S35	SGT	TAW	I10	TAW
Price (R/4,5kg carton)	ALI	PSE	ALI	PSE	THS	I10	RGT	ALI	I10	S35	CSS	S35	PSE	I10	PSE	PSE	THS	RGT	I10	S34
Royalties (R/4,5kg carton)	THS	RGB	I75	ATR	THS	DBH	RGT	CSS	ATR	THS	RGB	CSS	ATR	THS	DBH	THS	RGB	RGT	SGT	DBH
Labour cost (R/4,5kg carton)	I75	I10	I75	S34	RGT	I10	DBH	SGE	I10	STL	SGE	S35	ATR	I10	SGT	PSE	SGT	TAW	I10	S34
Chemical cost (R/4,5kg carton)	ALI	RGB	ALI	S34	RGT	DBH & RGT	DBH & RGT	ALI	I10	S35	RGB	S35	S35	I10	DBH	S35	RGB	RGT	I10	DBH
IRR	Farm B	Farm B	Farm A	Farm A	Farm A	Farm A	Farm B	Farm B	Farm A	Farm B	Farm B	Farm A	Farm B	Farm B	Farm B	Farm B	Farm B	Farm A	Farm A	Farm B

4.5 The change in the weekly harvest imposed by the change in the variety portfolio

The weekly harvest schedule for Farm A and B are presented below. The weekly harvest schedule is interpreted for each farm over a 15-year period to demonstrate the change in yield per week during the harvest season. There is a notable difference in the yield performance between the two farms. The lowest expected annual yield for Farm A is 40 940 4,5kg equiv. cartons in 2026/2027 (see Figure 4.39), when only 7 blocks are in full production, 2 blocks in 70%, 4 blocks in 66% production, 1 block in 30% production and 6 blocks in 0% production. The variety portfolio of Farm A produces a larger yield. In the same low performing year 20226/2027 and with the same block production capacity as Farm A, Farm A achieved a minimum annual yield of 45 329 4,5kg equivalent cartons (Figure 4.54). The 2026/2027 harvest is illustrated with a bright brown colour in Figure 4.12, noted in the colour key description as the year 2026. The maximum expected yield for Farm A is 84 934 4,5kg equiv. cartons in 2034/2035 (see Figure 4.47) when all the blocks are in full production (see Table 4.36). the maximum expected yield for Farm A is 87 421 4,5kg equiv. cartons, also in 2034/2035 (see Figure 4.62) when all the blocks are in full production (see Table 4.68). Year 20234/2035 is noted with a prominent yellow colour in all the harvest figures and in the colour key tab.

The yield performance will further be discussed in depth with two separate block size scenarios. First, the outcome of yield per week will be interpreted with the block sizes in table 3.10, i.e. all blocks are equal to one. Thereafter, the block sizes in Figure 4.13 and Figure 4.14 will be used to demonstrate the effect block sizes have on packable yield per week. The percentage packed per week for each block remains the same to demonstrate the effect of a larger block size and yield.

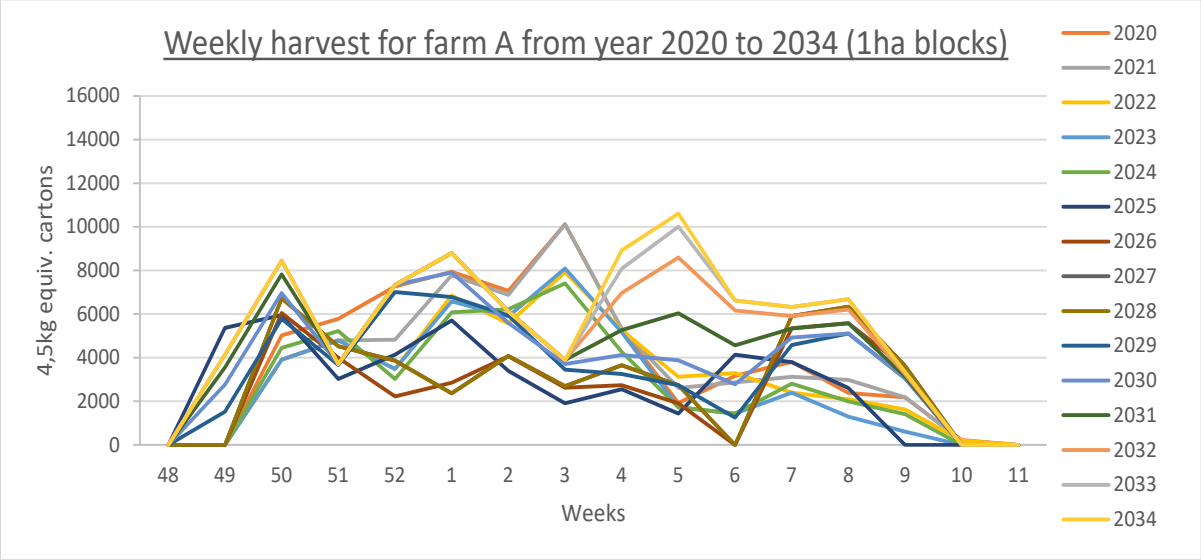
4.5.1 The change in the weekly harvest for Farm A over a fifteen-year period

In Figure 4.12, there is a noteworthy spike in year 2020/2021 (colour brown orange) and 2021/2022 (colour grey) in week 3. The total yield in 2020/2021 and 2021/2022 in week 3 for Farm A is 10 122 4,5kg equiv. cartons (see Figure 4.33 and Figure 4.34, respectively). Thereafter there is a sharp decline to 5 in 20222/2023 due to the removal of Block 20 and a yield reduction in Block 5 from 75% to 66% due to an increase in the THS vineyard age. When Block 7 is removed and the expected yield of Block 10 declines from 100% to 75% production capacity, the yield in week 3 is further reduced to 5 in 2023/2024. Yield in week 3 in Farm A is at an ultimate low in 2027/2028. When Block 16 is the only block in 100% production, Block 1 is re-established, Block 5 is still a young vineyard and only in 30% production, Block 14 is an old THS vineyard which only produces 66% of the variety's production capacity.

There is a notable increase in yield when the variety portfolio comes into full production in week 4 and week 5. In week 4, the expected yield for Block 19 increases from 30% to 70% in 2031/2032 and from 70% to 100% in 2032/2033. In 2032/2033, the yield in week 4 is further increased when Block 6 is in production for the first years, which is equiv. to 30% of the potential yield. As Block 6 ages the annual yield in week 4 increases and in 2033/2034 and 2033/2034, Block 6 yields 70% and 100%, respectively.

The change in production capacity in Block 6 and 19 also contributes to the change in yield in week 5. The yield in week 5 is further increased when Block 14 produces a yield for the first time in 2031/2032, which is equiv. to 30% of the varieties production capacity. The yield from Block 4 increases annually thereafter to 70% and 100% in 2032/2033 and 2033/2034.

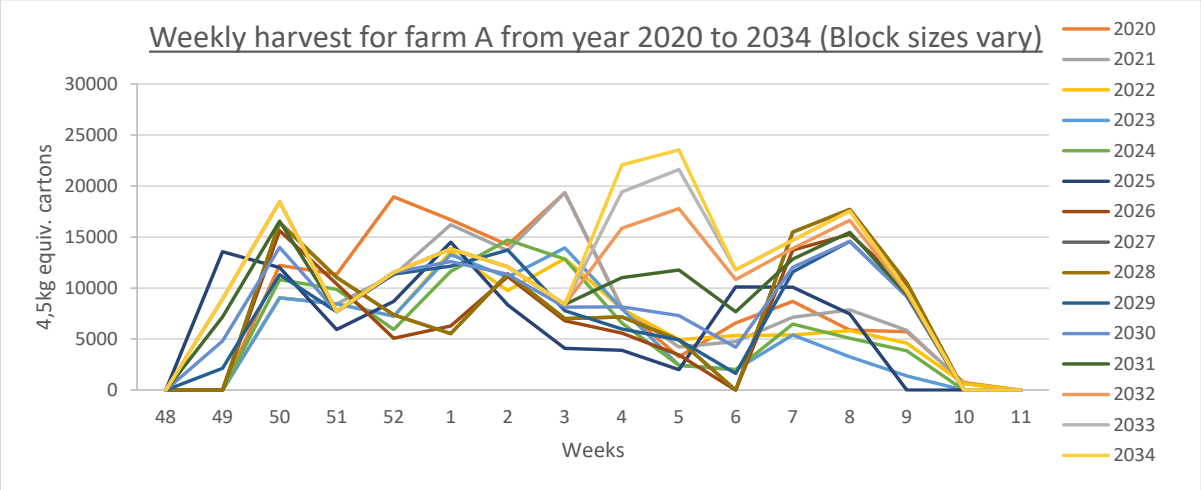
Figure 4.12: Weekly harvest for Farm A from year 2020 to 2034 (1ha blocks)



In Figure 4.13, the block sizes for Farm A are unequal to one another, which is presented in Table 4.97. Although the harvest peak is still in week 5 when the new varieties are in full production in 2034/2035, there is a notable increase in yield in week 8. The increase in block sizes results in a higher yield percentage allocated to the harvest in week 8. In Figure 4.12, only 20% of the blocks contribute to the harvest in week 8. While in Figure 4.13, 27,04% of the total farm size contribute to the harvest in week 8. However, the noticeable higher pack peak in week 8 in Figure 4.12 in relationship to Figure 4.13 is due to the increase in yield percentage, rather than block size. Before the change in block sizes, Block 4, 8, 11 and 20, contributed 7,86% of the annual harvest in week 8 in 2034/2035 (see Figure 4.45). While the unequal block sizes contribute to 22,45% of the annual yield in week 8 in Figure 4.13. The phenomenon is largely due to the high yield increase in Block 8 and 20 to 3,2ha and 3ha, respectively. The variety cultivated on Block 8, SGE, yields 4627 4,5kg equiv. cartons per ha. While S43, on Block 20,

yields 4 269 4,5kg equiv. cartons per ha. Thus, both varieties have high yields. The contribution of 22,75% of the annual yield harvest in week 8 would have been much lower if Block 4, with ATR that only yields 3259 4,5kg equiv. cartons per ha, or Block 11 with CSS, which yield 3041 4,5kg equiv. cartons would have been the larger blocks rather than Block 8 and 20.

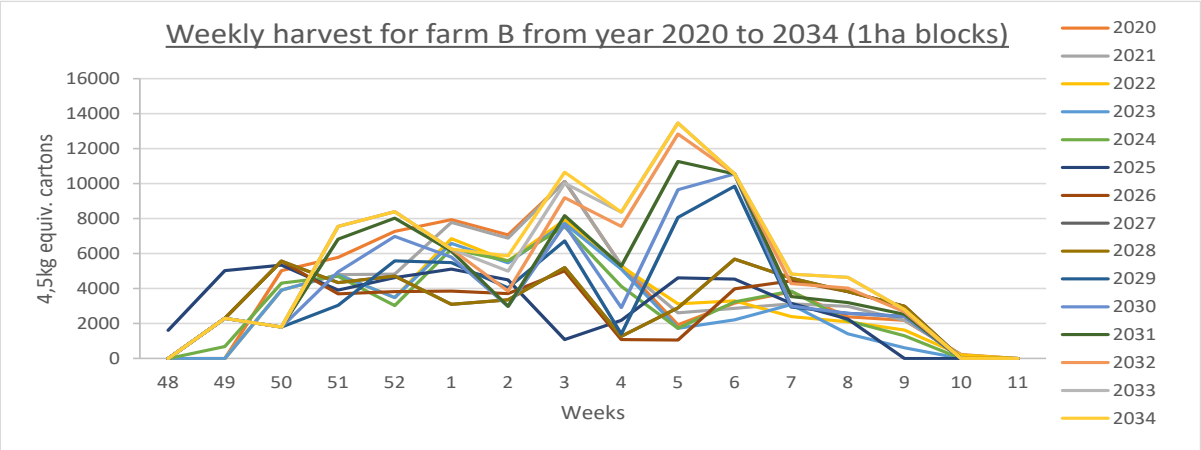
Figure 4.13: Weekly harvest for Farm A from year 2020 to 2034 (Block sizes vary)



4.5.2 The change in the weekly harvest for Farm A over a fifteen-year period

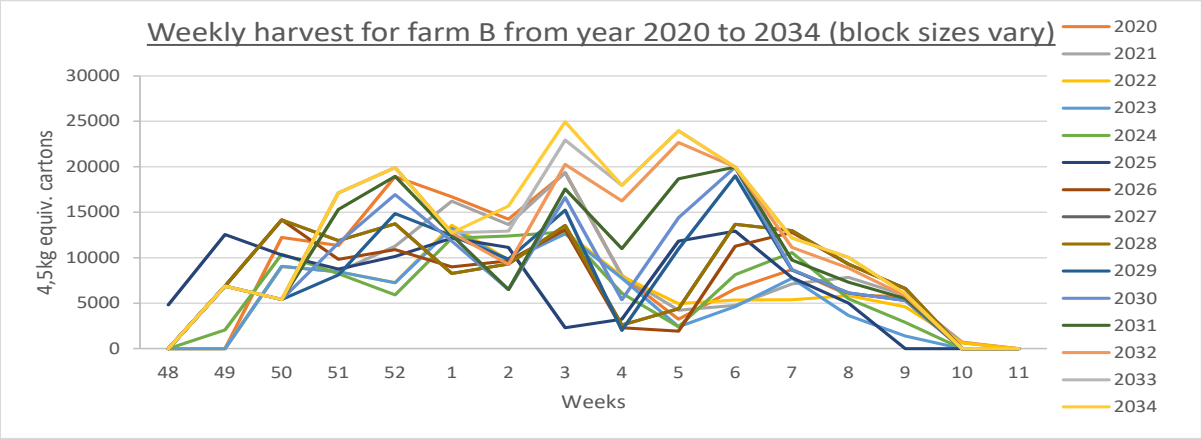
Similar to Farm A, the expected yield in week 3 declines when the current varieties are removed to replant the new varieties. However, the harvest in week 3 starts to increase again in 2026/2027, when the block is in full production for the first time. The harvest in week 3 increases annually thereafter. In 2027/2028, Block 5 yields 30% of the production capacity, which increases annually. Block 17 yields 30% of the production capacity in 2029/20230, which increases annually. In 2030/2031, Block 12 produces a yield of 30% of production capacity, which increases annually thereafter. The last block to contribute to the harvest in week 3 is Block 6, which produces a yield of 30% production capacity in 2032/2033. Therefore, Farm A has 5 blocks that contribute to the harvest in week 3 in 2034/2035, while Farm A only has 3 blocks. Thus, there is a notable higher harvest peak in week 3 for Farm A than Farm A.

Figure 4.14: Weekly harvest for Farm A from year 2020 to 2034 (1ha blocks)



The harvest peak in week 3 is even more evident in Figure 4.15 when block sizes vary. The highest pack week in Figure 4.15 is in week 3 when block sizes are unequal (see Table 4.97). The harvest peak moved twee weeks back from week 5 when all the blocks were 1ha in size (see Figure 4.14). There are five blocks, Block 5, 6, 12, 17 and 20, that contribute to the harvest in week 3. In Figure 4.15, the five blocks represent of 25,4% of the total farm, whereas, in Figure 4.14, the five blocks represent 25% of the total farm. Thus, only an additional 0,4% in Farm Area is committed to week 3. However, the significant change in the harvest peak from week 5 in Figure 4.14 to week 3 in Figure 4.15 is due to the increase in yield in a proportion of the total farm yield. In Figure 4.15 and Figure 4.62, the yield in week 3 represents 12,17%, while in Figure 4.15, the yield in week 3 represents 23,41% of the total yield in 2034/2035. The increase in the annual yield contribution from the five blocs is mainly due to the large of Block 6 to 3,2ha and Block 20 to 3ha. RGT is cultivated on Block 6 and TAW on block TAW. The two varieties produce larger yield than the varieties cultivated on Block 5, 12 and 17. Thus, if the lower producing blocks would have been the larger blocks the harvest peak in week 3 in Figure 4.15 would have been lower.

Figure 4.15: Weekly harvest for Farm A from year 2020 to 2034 (Block sizes vary)



4.6 Conclusion

The method applied to assess the importance of various factors in the financial success of a table grape variety selection was to model the various factors and present the generalised criteria for profitability. This case the criteria is the MIRR for each vineyard block. The longer-term assessment is necessary to allow production to go into full bearing. The idea was to integrate the various factors into one financial model to integrate the physical/biological factors with the financial/economic factors and present a single measurement, the MIRR. The MIRR allow for evaluation without including factors that will remain constant in the MIRR respective of the variety.

The physical/biological factors resemble the canopy management strategy required to manipulate the vines and to prepare the bunches for harvest. The various actions were described in Chapter 2 to explain why the canopy management strategy is required. The labour time and total chemical hormone cost to complete the canopy management strategy were calculated in Chapter 4 to serve as economic factors in the MIRR measurement. Three more economic factors were integrated into the farm simulation model to determine whether the difference in canopy management strategies between varieties is influential in decision-making when selecting table grape varieties. The three additional economic variables are yield, price and royalty costs. The factors were integrated with the simulation model, which was financially expressed in an enterprise model. The simulation model does not simulate the whole Farm But indicates the change a new table grape variety will have on the investigated factors.

The enterprise model was used to calculate the MIRR for a vineyard block over a fifteen-years. Within the period the current variety on the block was re-established with a new variety to calculate the change in cash flow. The outcome was measured in two separate scenarios, namely Farm A and Farm B. The current variety portfolio was the same for both farms and the re-establishment for each block occurred in the same year. However, the two farms re-established each block with different varieties. The impact the two re-established varieties have on the MIRR could be compared and the difference in the MIRR could be explained by analysing the difference in five variables between the two new varieties.

The results show that yield is the most influential variable towards the MIRR of a block. When comparing the MIRR of a block between Farm A and Farm B, the farm that planted the new variety with the highest yield obtained the highest MIRR. The second most influential variable towards MIRR is price. In ten different blocks, the MIRR was the highest for the farm that planted a variety that received a higher price. However, in none of the scenarios did a higher price compensate for a lower yield. The third variable, royalty cost, is considered influential towards MIRR if the yield and PIB for

the two varieties are similar. There is a noteworthy difference in the fourth variable, labour cost, between the IP registered varieties and the non-IP registered varieties. Less time is required to perform a canopy management strategy on IP registered- compared to non-IP registered varieties. Many of the IP-registered varieties have a labour cost in the proximity of R4,50 to R5,20, While the non-IP registered varieties have a slightly higher labour cost of approximately R5,80 to R9,20. The final variable investigated to explain the difference in the MIRR between Farm A and Farm B was the cost of chemical hormone regulators. The financial cost of the chemical hormone regulators is too low to indicate whether the required chemical growth hormone regulators have any effect on the MIRR. The deteriorating effect growth regulators have on fruit quality should be considered, rather than the financial implication associated with the chemical hormone regulators. The effect growth regulators have on the fruit quality is explained in chapter 2.

Apart from the five variables evaluated in the study, the change in the weekly pack schedule imposed by the change in the variety portfolio is an influential factor to consider when selecting a new table grape variety. The study investigated what effect the new variety will have on the weekly pack schedule by evaluating the different harvest windows for each variety. When a low performing variety such as THS is removed to be replaced with a variety that produces a high yield such as S35, there is a notable change in the weekly pack schedule. THS is harvested from week 1 to 4, while S35 is harvested from week 5 to 8. The change in variety does not only change the pack date, but also the quantity yield that needs to be packed. Therefore, the change from THS to S35 opens a pack window and causes a peak later in the pack season.

Chapter 5: Conclusions, summary and recommendations

5.1 Conclusions

The establishment decision of table grapes is rather complex and expensive. Despite the expected price for the specific variety factors such as production activities, timing of activities and balancing of those requirements with infrastructure needs careful consideration. It is thus a mixture of external and internal (capacity) factors that need consideration simultaneously in an integrated manner. The objective of this study was to identify the influential variables a farm manager should consider when selecting a new table grape variety. The study evaluated the effect of price, yield, royalty cost, labour hours and the cost of chemical hormone regulators on a variety's expected profitability. The study identified the variation among the five variables, which were incorporated into a financial simulation model to determine the effect the variables have on a variety's expected profitability. The results demonstrate a significant difference in the expected financial outcome due to the variation in the five-variables among the different varieties. When expected profitability is measured between varieties, certain variables proved more influential towards profitability.

With the complex production system, the canopy management strategies for the seventeen varieties could be simulated. This was done to determine the required labour hours and the cost of the chemical hormone regulators associated with the canopy management strategy for each variety. The cost for the synthetic hormone regulators were obtained from table grape producers. While, the timing of the canopy management actions on various varieties were obtained from a raw data set provided by the Agricultural Research Council (ARC) and the working schedule for an operational farm. The labour hours for the different actions for each variety vary. The time to complete the action (TO) per variety could not be accurately determined for all the varieties. However, the time to complete the actions for the varieties in Table 3.4 proposed a proper estimation of the time required to complete a specific task. The data demonstrated the time required to complete 11 of the 13 TO groups analysed in the study. The labour time required to complete a canopy management strategy could be calculated based on the time associated with other varieties with the use of the index algorithm proposed in Chapter 2. The labour time in Table 3.4 could be allied with the index to the proposed canopy management strategies which is, in turn, expressed in quantitative financial values. With a similar index the chemical hormone cost could be aligned with the canopy management strategies.

Calculating the expected yield for a variety mathematically is invalid. A variety's fertility must be included in the yield estimations. The Berg River table grape production symposium provided an accurate yield benchmark to include in the yield calculation for each variety. The simulation model provides a yield speculation adjustment, aiding to either increase of decrease the mathematically

calculated yield. The yield performance of each variety discussed at the symposium was incorporated into the yield adjustment aid to calculate credible results. The expected total yield was incorporated into a weekly harvest schedule to illustrate the pressure a new variety could impose on the pack house.

To measure the effect various varieties have on net farm income, a large data set was required. The price of varieties that are not currently cultivated on a specific farm had to be obtained to measure the financial outcome when replacing a vineyard with a new variety. The large data set, provided by a fruit exporter, Star South (2020), included the prices obtained in the export market in the 2019/2020 season for thirty-two different table grape varieties. The data represent the table grape export shipments for the 2019/2020 season from which seventeen different table grape varieties were identified to evaluate in the study. The varieties were selected based on the harvest dates for each variety in the Berg River. This provided an indication of the 240 possible relevant scenarios. The study selected the price per variety based on the net income for each variety discussed at the Berg River table grape production symposium (2020). The selected price represents an export shipment in the 2019/2020 season, which was used to describe the harvest date, berry size, packaging, export market and arrival date of the cartons simulated in the model. The price of the carton was used to calculate the royalty bearing cost for the IP-registered varieties.

Yield is directly correlated with internal rate of return (IRR). When comparing the performance of a block it was necessary to relate a specific variety to other varieties that a producer can choose. For this purpose, a hypothetical farm was constructed containing a possible basket of varieties in production. This was done to illustrate the expected effect of choosing a different variety but within the existing farm system. Two hypothetical farms were simulated to illustrate the usefulness of integrating the relative impact of the various variety specific production factors. For this purpose, the farms are simply named Farm A and Farm B.

The MIRR modified internal rate of return (MIRR) is used as the criteria of profitability. The MIRR allow for yield on investment assessment without necessarily considering the total investment requirement. Land price for instance would not differ and will not influence the variety selection decision. Between Farm A and Farm B, the MIRR would be the highest for the block with the highest yield. The second most influential value is price. The outcome of Block 13 in Farm A and Farm B demonstrate the trade-off between yield and price the best. In Farm A, Block 13 was re-established with PSE that yields 4098 4,5kg equiv. cartons per hectare and receives R158,24 per carton. While, Farm B re-established Block 13 with S35, which yields 5246 4,5kg equiv. cartons and receives R147,83 per caron. Between the two farms, Farm B obtained the highest IRR, with a higher yield and a lower price per carton.

There is a notable difference in the required labour hours to prepare the various table grape varieties. The information provided for the canopy management strategies for IFG varieties is insufficient, thus the calculated labour cost is not credible for I17, I10 and I75. Many of the IP-registered varieties have a labour cost in the proximity of R4,50 to R5,20, While the non-IP registered varieties have a slightly higher labour cost of approximately R5,80 to R9,20. The genetically improved registered varieties require less labour in the field to manipulate the vine and improve fruit quality. The royalty cost per 4,5kg equiv. carton would only be considered significant if the price and yield for the new selected variety between the two farm scenarios only have a marginal difference.

The cost of chemical hormone regulators is relatively less relevant when selecting new table grape varieties. However, with close examination the cost of chemical hormone regulators identifies a possible issue. THS, which is already the most labour-intensive variety in the study, requires frequent GA_3 application to induce berry shatter for a cluster loosening effect. A THS vineyard is sprayed with GA_3 on six different occasions. While, zero chemical hormone treatments are performed on RGT. Both the varieties are referred to as old varieties, but there is a noteworthy difference in yield. THS yields 2898 4,5kg equiv. cartons per hectare, while RGT yields 4955 4,5kg equiv. cartons per hectare. The low performing yield obtained by THS could be possible due to the high GA_3 application, which reduces fertility, as mentioned in Chapter 2. Therefore, when selecting new table grape varieties, the effect of chemical hormone regulators on the variety should be considered and not necessarily the financial cost.

There are many variables to consider when selecting a table grape variety. The two most important variables are yield and price per 4,5kg equiv. carton. Furthermore, decision-maker should be attentive the re-establishment order. Vineyards should be re-established in a sequence to ensure harvest peaks are manageable and to avoid unnecessary low harvest weeks. Royalty and labour cost should only be considered if the yield and price between the available varieties are similar. The method of modelling the intricate impacts of various varieties specific factors that impact on the variety selection in table grapes proved useful. The various factors are integrated and present the expected effect on profitability in one criteria. This should be useful to integrate into the block size consideration, which will differ for each farm when faced with a replacement decision for table grapes.

5.2 Summary

The objective of the study was to determine what variables have a significant effect on a variety's profitability, and to quantify the expected effect on profitability when a new vineyard is established. The five variables investigated in the study were yield, price, royalty cost, labour hours, and chemical

hormone regulators. All the variables were expressed in the equivalent of 4,5kg equiv. cartons to measure the marginal difference between varieties.

The performance of each variety was determined in a simulation model which integrated the physical/biological and technical aspects with the financial information in the Farm Business into an enterprise budget. An enterprise budget was used to calculate the MIRR for twenty different blocks when a vineyard is re-established with a new variety. By performing two farm simulations, the MIRR could be determined when re-establishing the current variety with one of two varieties, i.e. the selected variety to re-establish a vineyard block for Farm A and Farm B was different. The outcome of two different varieties could be compared. The reason for a difference in the MIRR for Farm A and Farm B was interpreted with proximity to the 4,5kg equiv. variables. The most influential 4,5kg equiv. variable for each block was identified by interpreting the variation in variable values and MIRR.

The change of a variety impacts the weekly packing schedule which was measured over a fifteen-year period. The period was selected as it represents a typical life expectancy for table grape vineyards in the Berg River area. The vineyards production performance was collated with the vineyards age to demonstrate how the change in varieties will influence the weekly harvest pack schedule. The age performance indicators were adopted to calculate the annual increase and decrease in yield for six age profiles. Each age profile indicates a percentage of the full production potential that will be harvested at the given age. First, a vine younger than two years produces no yield. Second, a two-year-old vine produces 30% of the total potential harvest. Third, a three-year-old vineyard produces 70% of the total yield. Fourth, a vineyard older than three years and younger than fifteen years is in full production.

The data and information required to perform the current study was attained from various sources in the table grape industry. The necessary canopy management strategies performed on table grape varieties to prepare vines and bunches was obtained from published sources. Data was required to determine the time to complete the various canopy management strategies. The data was obtained from two sources. First, the vineyard and bunch work schedule for a farm in the Hex River. The work schedule indicated when a specific action is performed on a variety and how many vines can be manipulated within an hour. A second data set was obtained from the ARC (2020). The raw data provided by ARC (2020) indicated how many hours are committed to one hectare when a specific action is performed on a variety.

The price of the seventeen varieties was extracted from a data set provided by a fruit exporter. The data set contained 508 shipment invoices. Each shipment reflected a container filled with one table grape variety. Besides the variety, the export invoice indicated the harvest date, packaging, export

market and arrival date. With close consideration to the harvest date of each shipment, 240 shipments with harvest dates in the Berg River harvest window were identified. The 240 shipments provided numerous prices for seventeen varieties exported to various countries. Furthermore, the data set indicated the shipment value at different incoterms, which were required to calculate the royalty bearing cost per 4,5kg equiv. carton. The percentage royalty cost per 4,5kg equiv. carton at each incoterm was obtained from numerous discussions with IP-owners.

Yield is the most important variable to consider when selecting a new table grape variety. When comparing the MIRR (modified internal rate of return) of a block between Farm A and Farm B, the farm that planted the new variety with the highest yield obtained the highest MIRR. Two hypothetical farms were modelled to illustrate the effect of the integration of the various factors on total profitability over the longer term. The second most influential variable is price per 4,5kg equiv. carton. While, royalty cost and labour cost are only influential when price and yield are similar between varieties. The low cost associated with chemical hormone cost is irrelevant when selecting new table grape varieties. The final factor to consider when introducing new table grape varieties to a farm varietal portfolio is the harvest window. Vineyards should be removed and replanted in a sequence to ensure the weekly harvest is manageable and to avoid weeks with no harvest within the pack season due to poor variety planning.

5.3 Recommendations

The yield, price and fruit quality are not consistent in the real world. Although the study did consider the variation in yield associated with a vineyard's age, certain varieties have bi-lateral yield, i.e. the fertility of a vineyard in full production varies annually. The variation in price for each variety is not only due to market condition, but also fruit quality. The current study selected one price per variety, while in reality, the price obtained per variety varies due to variation in fruit quality. Another factor associated with quality the study did not account for is the variation between varieties in susceptibility to diseases. Certain varieties require more fungicide and other chemical spray applications, which the study did not account for. Future studies should consider these quality disorders when comparing the profitability between table grape varieties.

The proposed production simulation model can be adopted to analyse other deciduous fruits. The complex production simulation model could be adopted to determine input cost associated labour and spray activities to prepare fruit trees. With an export data set of the specified fruit, a similar approach could be performed to investigate the profitability of varieties to help farm managers decide what variety to select to re-establish orchards. The additional information could be incorporated into the table grape simulation model to determine the profitability between the different fruits.

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7 Annexure

7.1 Annexure A: Canopy management strategy

Figure 3.16: The canopy management strategy for THS

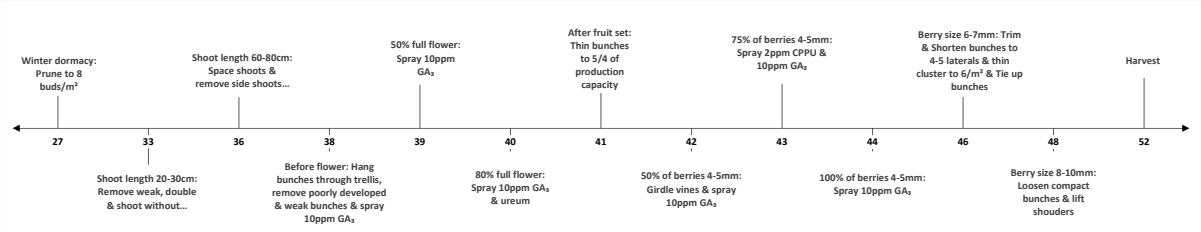


Table 3.18: Table grape viticultural schedule

Variety	Winter dormacy	2-3 Leaf stage	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	80% full flower	Beginning of fruit set (berry size 2-4mm)	110% flower (Start of fruit set)	Beginning of fruit set	2nd application (2 days later)	After fruit set	Berry size 2-4mm	50% of berries 4-5mm	75% of berries 4-5mm	100% of berries 4-5mm	Berry Size 5-6mm	Berry size 6-7mm	Berry size 6-8mm	Berry size 7-8mm	Berry size 8-9mm	Berry size 8-10mm	Berry size 9-10mm	Berry size 9-12mm	Berry size 10-12mm	Berry size 12-15mm	5% veraison	10% veraison	50% veraison	After veraison	Harvest
ATR	HP008		HM00U	HO0OT HO00S	HR00R HR00W	HS00S							HL0OT HS010											TG002 HZ00B		HL00F			TV025			*
CSS	HP008		HM00U	HO0OT HO00S HM00S	HX1/C HR00R HR00W HR00A					HA0LL HS010 HL0OT			HZ00B HL00C HA0LL				HI00G						TE0N1 HT006 HG7,5 HR00A				HA0LS	TV045			*
DBH	HP008		HM00U	HO0OT HO00S HM00P	HS0OT HX1/C HR00A HR00W	HI00G HM00T							HS008 HA0LL								HT006 HZ00B HL0OT						HL00F						*
PSE	HP008	TE0BU TFN30	HM00D HM00B HM00P	HO00S HM00S HO0OT	HL0OT HX1/C HR00B						TE0BU TG1,5	TE0BU TG1,5							HZ00B HT006 HX1/C HS008					HG005			HL00L HL00F				TP00I HBIRD	*
RGB	HP008		HM00U	HO0OT HO00S	HA0LL HX1/C HR00A HR00W								HZ00B HT006 HL00C HS008								HL0OT						HG020		HL00F			*
SGT	HP008		HM00U	HO0OT HO00S HM00S	HX1/C HR00R HR00W HR00A	HC002	HC002						HT006 HL0OT HA0LL								TG005 TE0N1								HV030 HA0LL			*
THS	HP008		HM00B HM00D HM00W	HO00S HM00S	HZ00T HR00P HR00W TG010		TG010 TE0SB	TG010 TE0SB TE0BU					HX5/4		TG010 HI00G TE1N2	TC002 TG010 TE1N2	TG010 TE1N2		HS005 HT006 HZ00B HL0OT				HL00L HL00S									*
ALI	HP008		HR00B HM00U HM00D	HO0OT HO00S HM00P HR00B	HR00W HR00A TE0BU					TG001 TE0BU			HZ00B HL00C HA0LL							TG002 HL00S HL0OT HL00L												*
I10	HP008				HS0OT HR00A					HT007			HA0LL							HG015 HC001												*
I75	HP008								HA0LL	HG015				HG015						HS0OT			HT6,5		HT6,5			HG015		HG015		*
S35	HP008		HM00D HM00W	HO00S HM00S	HR00C HX1/C HR00W								HS008 HZ00B HA0LL					HL0OT HT006 HL00L			HL00L	TG020 HI00G TE1N2 TC1,5										*
SGE	HP008		HM00U	HO0OT HO00S HM00S	HX1/C HR00R HR00W HR00A					TE0BU TG002				TE0BU TG002						TG002 HZ00B HS006 HT005							TV040	TV040			*
TAW	HP008		HM00W HM00D HM00B	HO0OT HO00S HM00S	TP00B HX1/C HR00P HR00W	TP00B				TG001			HA0LL HS008 HZ00B						HT6,5 TG010 HL0OT				HL00L				HV040					*
S34	HP008		HM00U	HO0OT HO00S HM00S	HA0LL HX1/C HR00R HR00W	HS0OT HA0LL HM00T	TC001						HS008 HT006 HL0OT HA0LL											HZ00B		HL00F							*
I17	HP008									TG001				HI00G				HT6,5				HL00L	HG010 HC001		HA1LB			HA2LB				*
STL	HP008		HM00W HM00D HM00B	HO0OT HO00S	HX1/C HR00P HL0OT HR00C						TE0BU TG1,5								HT006 HX1/C HZ00B HS008						TE0N1 HG015		HL0OT HL00L HL00F			HV030 HBIRD TP00I	*
RGT	HP008		HM00D HM00W	HO0OT HO00S HR00A		HS0OT							HZ00B HS008 HA0LL					HL0OT HT006 HL00L					HL00L									*

7.2 Annexure B: Table grape export data set

Table 3.19: Export data set 1

Shipment invoice no.	Arrival Point	Variety Group Code	Variety Code	Variety Licensor Code	Size Code	Outer Pack Code	Inner Pack Code	Quantity	Net Trade Amount (LCY)	Net Trade Price (LCY)	FOB	FOB (4,5kg)	DIP	DIP (4,5kg)	Ex-works	Ex-works (4,5kg)	PIB	PIB (4,5kg)	Harvest Week	Actual Arrival Week
1	NLRTM	WS	PSE	HOEKS	L	B04I	CB	180	39 186	R217,70	36 850	205	35 344	196	34 191	190	27 747	154	45	48
2	NLRTM	WS	ELS	TOPFR	L	B04I	CB	180	39 186	R217,70	36 850	205	35 344	196	34 191	190	27 226	151	45	48
3	GBLGP	WS	ELS	TOPFR	L	A05D	HS	115	21 502	R186,97	21 502	187	20 793	181	19 743	172	16 562	144	45	48
4	NLRTM	WS	ELS	TOPFR	L	B04I	PC	170	35 382	R208,13	33 033	194	31 588	186	30 435	179	23 592	139	45	49
5	NLRTM	WS	PSE	HOEKS	L	B04I	CB	170	36 626	R215,45	34 401	202	32 936	194	31 783	187	25 547	150	46	49
6	NLRTM	RS	STL	HOEKS	XL	B04I	PC	170	32 684	R192,26	30 459	179	29 058	171	27 904	164	21 745	128	46	49
7	CATOR	RS	STL	HOEKS	XL	B08D	CB	102	38 599	R378,42	34 647	340	33 151	325	31 997	314	23 926	235	46	50
8	CATOR	WS	PSE	HOEKS	XL	B08D	CB	102	38 599	R378,42	34 713	340	33 217	326	32 063	314	24 058	236	45	50
9	CATOR	WS	ELS	TOPFR	XL	B08D	CB	102	38 599	R378,42	34 713	340	33 217	326	32 063	314	23 527	231	45	50
10	GBLGP	WS	PSE	HOEKS	L	A05D	HS	120	22 325	R186,04	22 325	186	21 598	180	20 548	171	17 709	148	46	49
11	GBLGP	RS	STL	HOEKS	L	A05D	HS	115	22 946	R199,53	22 946	200	22 206	193	21 156	184	18 342	159	46	49
12	AEJEA	WS	ELS	TOPFR	XL	B04I	ZL	180	27 281	R151,56	27 281	152	26 430	147	25 380	141	21 551	120	45	3
13	HKHKG	RS	STL	HOEKS	XL	B04I	SZ	170	16 012	R94,19	13 783	81	12 138	71	10 752	63	4 097	24	45	50
14	CATOR	RS	STL	HOEKS	XL	B08D	CB	102	38 738	R379,78	34 825	341	33 327	327	32 173	315	24 139	237	46	51
15	AEJEA	WS	ELS	TOPFR	XL	B04I	ZL	180	27 312	R151,73	27 312	152	26 476	147	25 323	141	21 424	119	46	50
16	GBLGP	MX	MPS		L	A05D	HS	115	26 116	R227,09	23 897	208	22 601	197	21 447	186	15 675	136	47	50
17	GBLGP	RS	STL	HOEKS	L	A05D	HS	115	25 864	R224,90	23 645	206	22 353	194	21 199	184	15 425	134	46	50
18	NLRTM	RS	STL	HOEKS	XL	B04I	PC	170	31 377	R184,57	29 143	171	27 762	163	26 609	157	20 448	120	47	50
19	NLRTM	WS	ELS	TOPFR	L	B04I	PC	180	24 063	R133,68	21 829	121	20 557	114	19 404	108	12 757	71	46	50
20	NLRTM	WS	PSE	HOEKS	L	B04I	PC	170	26 915	R158,32	24 681	145	23 372	137	22 218	131	16 129	95	47	50
21	GBLGP	RS	STL	HOEKS	L	A05D	HS	115	22 982	R199,85	22 982	200	22 241	193	21 191	184	18 376	160	46	50
22	GBLGP	WS	PSE	HOEKS	L	A05D	HS	120	25 785	R214,88	23 456	195	22 164	185	21 011	175	15 105	126	47	50
23	GBLGP	WS	GRP	TOPFR	XXL	B09D	NP	90	33 521	R372,45	31 191	347	29 776	331	28 623	318	21 757	242	47	50
24	NLRTM	WS	ELS	TOPFR	L	A05D	HS	120	10 725	R89,38	8 396	70	7 345	61	6 192	52	126	1	47	50
25	NLRTM	WS	PSE	HOEKS	L	A05D	HS	115	22 425	R195,00	20 096	175	18 858	164	17 705	154	11 880	103	47	50
26	NLRTM	WS	GRP	TOPFR	XL	B04I	PC	170	29 835	R175,50	27 506	162	26 149	154	26 046	153	20 386	120	46	50
27	NLRTM	RS	STL	HOEKS	L	B04I	CB	170	34 531	R203,13	32 313	190	30 882	182	29 728	175	23 545	139	47	50
28	RULED	WS	ELS	TOPFR	XL	B04I	ZL	180	28 503	R158,35	28 502	158	27 105	151	25 952	144	21 403	119	46	52
29	RULED	WS	ELS	TOPFR	XL	B04I	SZ	170	26 919	R158,35	26 919	158	25 550	150	24 397	144	19 975	118	47	52
30	SGSIN	RS	STL	HOEKS	XL	B04I	SZ	160	31 666	R197,91	30 320	189	28 934	181	27 781	174	22 571	141	47	51
31	SGSIN	WS	ELS	TOPFR	XL	B04I	SZ	170	33 645	R197,91	32 299	190	30 882	182	29 728	175	23 919	141	47	51
32	MYPKG	WS	ELS	TOPFR	XL	A05D	PL	120	22 606	R188,38	21 324	178	20 083	167	18 930	158	13 720	114	46	51
33	QAHMD	WS	PSE	HOEKS	L	B04I	SZ	170	24 922	R146,60	24 922	147	24 377	143	23 147	136	20 059	118	47	51
34	AEJEA	WS	PSE	HOEKS	L	B04I	SZ	170	29 906	R175,92	28 003	165	26 884	158	25 655	151	20 009	118	47	50
35	SAKAC	WS	ELS	TOPFR	XL	B04I	ZL	170	14 953	R87,96	14 953	88	14 387	85	13 337	78	9 909	58	47	1
36	NLRTM	RS	STL	HOEKS	XL	B04I	CB	170	34 361	R202,13	32 232	190	30 804	181	29 650	174	23 550	139	48	51
37	GBLGP	WS	PSE	HOEKS	L	A05D	HS	115	24 749	R215,21	22 514	196	21 239	185	20 086	175	14 333	125	48	51
38	GBLGP	RS	STL	HOEKS	L	B09D	NP	90	33 573	R373,04	31 338	348	29 922	332	28 768	320	22 523	250	47	51
39	GBLGP	WS	ELS	TOPFR	L	A05D	HS	120	25 826	R215,21	23 590	197	22 298	186	21 145	176	14 955	125	47	51
40	GBLGP	WS	PSE	HOEKS	L	B09D	NP	90	33 573	R373,04	31 338	348	29 922	332	28 768	320	22 523	250	48	51
41	GBLGP	RS	FMS		L	A05D	HS	115	13 824	R120,21	13 824	120	13 283	116	12 233	106	10 366	90	48	51
42	GBLGP	RS	STL	HOEKS	L	A05D	HS	115	21 472	R186,72	21 472	187	20 764	181	19 714	171	16 935	147	47	51
43	NLRTM	MX	MPS		L	A05D	HS	115	24 692	R214,71	22 563	196	21 289	185	20 135	175	14 478	126	47	51
44	NLRTM	RS	STL	HOEKS	L	B04I	PC	170	26 832	R157,83	24 703	145	23 436	138	22 283	131	16 344	96	47	51
45	NLRTM	RS	STL	HOEKS	L	A05D	HS	115	21 647	R188,23	19 518	170	18 332	159	17 179	149	11 609	101	47	51
46	GBLGP	RS	STL	HOEKS	L	A05D	HS	115	23 830	R207,22	21 594	188	20 334	177	19 181	167	13 430	117	47	51
47	GBLGP	MX	MPS		L	A05D	HS	115	26 040	R226,44	23 911	208	22 616	197	21 463	187	15 783	137	47	51
48	NLRTM	WS	ELS	TOPFR	XL	B04I	PC	170	10 975	R64,56	8 846	52	7 833	46	6 680	39	462	3	47	51
49	NLRTM	WS	PSE	HOEKS	L	B04I	PC	170	19 384	R114,02	17 255	102	16 066	95	14 913	88	9 052	53	48	51
50	NLRTM	WS	GRP	TOPFR	XL	B04I	CB	180	33 472	R185,96	31 236	174	29 822	166	28 669	159	21 883	122	48	51
51	NLRTM	RS	TAW	CORE	L	A05D	PU	115	19 525	R169,79	17 290	150	16 099	140	14 945	130	8 518	74	48	51
52	NLRTM	RS	FMS		R	A05D	UL	115	24 174	R210,21	21 939	191	20 673	180	19 520	170	14 509	126	48	51
53	NLRTM	WS	ELS	TOPFR	L	A05D	PL	120	21 375	R178,12	19 246	160	18 025	150	16 872	141	10 840	90	47	51
54	NLRTM	WS	GRP	TOPFR	XL	A05D	HS	120	22 290	R185,75	20 160	168	18 925	158	17 772	148	11 725	98	48	51
55	NLRTM	WS	PSE	HOEKS	XL	B04I	CB	180	31 095	R172,75	28 966	161	27 589	153	26 436	147	20 320	113	47	51
56	NLRTM	RS	STL	HOEKS	L	A05D	PU	115	21 610	R187,91	19 481	169	18 257	159	17 103	149	11 495	100	48	51
57	NLRTM	WS	PSE	HOEKS	L	A05D	HS	115	23 244	R202,13	21 115	184	19 865	173	18 711	163	13 077	114	47	51
58	NLRTM	WS	ELS	TOPFR	L	A05D	HS	115	22 315	R194,04	20 079	175	18 843	164	17 690	154	11 591	101	46	51
59	ILASH	WS	GRP	TOPFR	L	B04I	ZL	180	15 652	R86,96	11 481	64	10 231	57	9 078	50	521	3	47	3
60	ILASH	WS	PSE	HOEKS	L	B04I	ZL	180	15 626	R86,81	11 455	64	10 205	57	9 052	50	1 020	6	47	3
61	GALBV	WS	ELS	TOPFR	XL	B04I	ZL	28	2 114	R75,50	2 114	76	2 066	74	2 066	74	1 594	57	52	1
62	NLRTM	WS	ELS	TOPFR	XL	B04I	ZL	180	30 712	R170,62	28 477	158	26 869	149	24 562	136	16 429	91	46	51
63	NLRTM	WS	ELS	TOPFR	XL	B04I	SZ	170	30 387	R178,75	28 152	166	26 787	158	25 634	151	18 994	112	47	51
64	NLRTM	RS	STL	HOEKS	XL	B04I	ZL	170	34 531	R203,12	32 296	190	30 865	182	29 711	175	23 502	138	46	51
65	SADMM	WS	PSE	HOEKS	L	B04I	CB	180	29 027	R161,26	26 974	150	25 631	142	24 477	136	18 465	103	48	1
66	AEJEA	WS	PSE	HOEKS	L	B04I	CB	180	29 027	R161,26	27 141	151	25 798	143	24 645	137	18 800	104	49	52
67	AEJEA	WS	PSE	HOEKS	L	B04I	ZL	180	29 027	R161,26	27 141	151	25 798	143	24 645	137	18 800	104	49	52
68	NLRTM	WS	PSE	HOEKS	L	A05D	HS	115	22 787	R198,15	20 525	178	19 282	168	18 129	158	12 358	107	48	52
69	NLRTM	WS	PSE	HOEKS	L	A05D	PL	120	21 458	R178,81	19 196	160	17 974	150	16 821	140	11 033	92	48	52
70	NLRTM	RS	TAW	CORE	L	A05D	PL	120	20 047	R167,06	17 786	148	16 586	138	15 433	129	8 878	74	48	52
71	NLRTM	RS	TAW	CORE	L	A05D	PU	115	22 673	R197,16	20 520	178	19 274	168	19 171	167	15 312	133	48	52
72	NLRTM	RS	STL	HOEKS	L	B04I	PC	170	29 585	R174,03	27 431	161	26 121	154	24 967	147	18 945	111	48	52
73	NLRTM	WS	PSE	HOEKS	XL	B04I	PC	180	32 020	R177,89	29 866	166	28 514	158	27 361	152	21 229	118	48	52
74	GBLGP	WS	PSE	HOEKS	L	A05D	HS	120	24 172	R201,44	22 080	184	20 853	174	19 700	164	14 076	117	48	52
75	GBLGP	WS	GRP	TOPFR	L	A05D	HS	120	24 247	R202,05	22 154	185	20 926	174	19 773	165	13 753	115	49	52
76	GBLGP	RS	FMS		L	A05D	HS	115	22 494	R195,60	20 401	177	19 201	167	18 048	157	13 246	115	48	52
77	GBLGP	RS	STL	HOEKS	L	A05D	HS	115	21 152	R183,93	19 060	166	17 881	155	16 728	145	11 191	97	48	52
78	GBLGP	RS	TAW	CORE	L	A05D	HS	120	23 453	R195,44	21 255	177	20 042	167	18 889	157	12 384	103	48	52
79	NLRTM	WS	PSE	HOEKS	L	B04I	CB	180	32 718	R170,04	30 565	170	29 205	162	28 051	156	21 911	122	48	52
80	NLRTM	WS	GRP	TOPFR	L	A05D	HS	120	26 143	R206,13	23 989	200	22 732	189	21 578	180	15 468	129	49	52
81	NLRTM	RS	FMS		R	A05D	UL	115	15 901	R126,54	13 747	120	12 654	110	11 500	100	6 744	59	48	52
82	NLRTM	RS	STL	HOEKS	L	A05D	HS	115	25 998	R214,34	23 844	207	22 589	196	21 436	186	15 761	137	49	52
83	GBLGP	WS	ELS	TOPFR	XL	B09D	NP	90	34 152	R379,47	31 955	355	30 530	339	29 376	326	22 644	252	48	52
84	GBLGP	WS	ELS	TOPFR	XL	A05D	HS	120	26 271	R218,93	24 074	201	22 859	190	21 705	181	15 630	130	48	52
85	GBLGP	RS	STL	HOEKS	L	B09D	NP	90	34 152	R379,47	32 060	356	30 634	340	29 481	328	23 370	260	48	52
86	CATOR	WS	PSE	HOEKS	XL	B08D	CB	102	38 807	R380,46	34 882	342	33 620	330	33 516	329	27 996	274	52	1
87	CATOR	WS	ELS	TOPFR	XL	B08D	CB	102	38 807	R380,46	34 882	342	33 382	327	32 228	316	23 630	232	49	1
88	CATOR	WS	PSE	HOEKS	R	A09D	PL	80	28 646	R358,08	24 721	309	23 384	292	22 231	278	14 467	181	52	1
89	GBLGP	BS	SGT	LCS	L	A05D	HS	115	27 414	R238,39	25 217	219	23 900	208	22 746	198	17 007	148	48	52
90	GBLGP	BS	SGT	LCS	L	B09D	NP	90	35 028	R389,20	32 831	365	31 392	349	30 238	336	24 033	267	48	52

Table 3.20: Export data set 2

Shipment invoice no.	Arrival Point	Variety Group Code	Variety Code	Variety Licensor Code	Size Code	Outer Pack Code	Inner Pack Code	Quantity	Net Trade Amount (LCY)	Net Trade Price (LCY)	FOB	FOB (4,5kg)	DIP	DIP (4,5kg)	Ex-works	Ex-works (4,5kg)	PIB	PIB (4,5kg)	Harvest Week	Actual Arrival Week
91	SADMM	RS	STL	HOEKS	L	B04I	ZL	170	25 847	R152,04	25 847	152	25 282	149	24 060	142	20 956	123	49	3
92	SADMM	WS	PSE	HOEKS	L	B04I	ZL	180	27 367	R152,04	27 367	152	26 769	149	25 547	142	22 342	124	49	3
93	ILASH	WS	PSE	HOEKS	L	A05D	PL	120	30 937	R257,81	26 930	224	22 961	191	22 961	191	14 754	123	52	3
94	ILASH	WS	ELS	TOPFR	XL	B04I	ZL	170	29 218	R171,87	25 085	148	23 618	139	22 465	132	13 815	81	48	3
95	ILASH	WS	ELS	TOPFR	XL	A05D	PL	115	20 188	R175,55	16 055	140	14 732	128	13 578	118	5 487	48	48	3
96	CATOR	MX	MPS		L	A09D	PL	75	31 322	R417,62	27 666	369	26 286	350	25 133	335	17 687	236	47	1
97	CATOR	RS	STL	HOEKS	XL	B08D	CB	96	35 871	R373,66	32 033	334	30 581	319	29 427	307	21 597	225	47	1
98	CATOR	WS	GRP	TOPFR	XXL	B08D	CB	96	35 871	R373,66	32 033	334	30 581	319	29 427	307	21 103	220	47	1
99	CATOR	WS	ELS	TOPFR	L	A09D	PL	80	28 134	R351,68	24 296	304	23 206	290	23 102	289	17 839	223	52	1
100	SADMM	WS	PSE	HOEKS	L	B04I	ZL	180	16 825	R93,47	16 825	93	15 640	87	14 486	80	10 706	59	49	3
101	AEJEA	WS	PSE	HOEKS	L	B04I	ZL	170	25 258	R148,58	23 474	138	22 191	131	21 038	124	15 444	91	49	2
102	AEJEA	RS	STL	HOEKS	L	B04I	ZL	170	25 258	R148,58	23 474	138	22 191	131	21 038	124	15 444	91	49	2
103	AEJEA	BG	BGM		XL	B04I	ZL	170	25 258	R148,58	23 474	138	22 191	131	21 038	124	16 420	97	49	2
104	AEJEA	WS	PSE	HOEKS	L	B04I	ZL	180	18 766	R104,26	18 800	104	17 579	98	16 426	91	12 643	70	49	2
105	SADMM	WS	PSE	HOEKS	L	B04I	ZL	170	24 446	R143,80	22 530	133	21 260	125	20 107	118	14 393	85	49	2
106	CATOR	WS	PSE	HOEKS	L	B08D	CB	102	35 643	R349,44	31 850	312	30 401	298	29 248	287	21 401	210	49	2
107	CATOR	WS	ELS	TOPFR	XL	B08D	CB	102	37 871	R371,28	34 078	334	32 593	320	31 440	308	23 036	226	49	2
108	CATOR	WS	PSE	HOEKS	L	A08D	HS	80	29 702	R371,28	25 910	324	24 806	310	24 703	309	19 473	243	52	2
109	CATOR	WS	PSE	HOEKS	R	A09D	PL	80	20 966	R262,08	17 174	215	15 990	200	14 837	185	7 316	91	49	2
110	CATOR	WS	PSE	HOEKS	XL	B08D	CB	102	35 643	R349,44	31 850	312	30 639	300	30 536	299	25 198	247	52	2
111	MYPKG	BS	SGT	LCS	L	A05D	PL	115	26 873	R233,68	25 549	222	24 240	211	23 087	201	18 229	159	49	1
112	SGSIN	BS	SGT	LCS	XL	B04I	ZL	170	37 891	R222,89	36 630	215	35 145	207	33 992	200	28 744	169	49	1
113	SGSIN	WS	ELS	TOPFR	XXL	B04I	ZL	180	33 649	R186,94	32 388	180	30 971	172	29 818	166	24 026	133	48	1
114	SGSIN	WS	PSE	HOEKS	XL	B04I	ZL	180	33 649	R186,94	32 388	180	30 971	172	29 818	166	24 544	136	48	1
115	MYPKG	WS	PSE	HOEKS	XL	B04I	ZL	180	34 943	R194,13	33 620	187	32 182	179	31 028	172	25 671	143	48	1
116	MYPKG	WS	ELS	TOPFR	XXL	B04I	ZL	180	33 649	R186,94	32 325	180	30 908	172	29 755	165	23 900	133	52	1
117	ILASH	RS	FMS		L	A05D	PL	120	30 137	R251,14	26 032	217	22 163	185	21 974	183	13 580	113	52	4
118	ILASH	WS	PSE	HOEKS	L	A05D	PL	120	30 137	R251,14	26 032	217	22 163	185	21 974	183	13 580	113	52	4
119	ILASH	WS	GRP	TOPFR	L	A05D	PL	115	15 551	R135,23	11 483	100	9 892	86	8 653	75	302	3	48	4
120	ILASH	WS	ELS	TOPFR	XL	B04I	ZL	170	24 084	R141,67	20 015	118	18 273	107	17 034	100	8 127	48	48	4
121	ILASH	WS	ELS	TOPFR	XL	A05D	PL	115	15 551	R135,23	11 483	100	9 892	86	8 653	75	302	3	48	4
122	RULED	WS	PSE	HOEKS	XL	B04I	ZL	170	27 976	R164,57	27 976	165	26 588	156	25 435	150	21 523	127	49	4
123	RULED	BG	BGM		XL	B04I	ZL	170	14 596	R85,86	14 596	86	13 452	79	12 298	72	9 603	56	49	4
124	RULED	WS	PSE	HOEKS	XL	B04D	ZL	170	27 976	R164,57	27 976	165	26 826	158	26 826	158	25 446	150	52	4
125	HKHKG	BS	SGT	LCS	XL	B04I	ZL	170	43 972	R258,66	41 806	246	39 930	235	38 719	228	32 117	189	49	3
126	HKHKG	WS	PSE	HOEKS	XL	B04D	ZL	170	35 074	R206,32	32 906	194	31 174	183	31 102	183	26 900	158	52	3
127	GHTEM	BS	SGT	LCS	XL	B04I	PC	170	24 650	R145,00	24 650	145	23 873	140	22 823	134	19 726	116	49	52
128	SGSIN	RS	RAL	TOPFR	XL	B04I	ZL	180	39 785	R221,03	38 473	214	36 958	205	35 805	199	28 850	160	50	2
129	SGSIN	BS	SGT	LCS	XL	B04I	ZL	180	38 502	R213,90	37 190	207	35 695	198	34 542	192	29 167	162	50	2
130	AEJEA	BS	SGT	LCS	XL	B04I	ZL	160	23 957	R149,73	22 141	138	20 879	130	19 726	123	14 212	89	50	3
131	AEJEA	BG	BGM		L	B04I	ZL	170	21 818	R128,34	21 818	128	21 102	124	20 052	118	17 969	106	50	2
132	AEJEA	WS	PSE	HOEKS	L	B04I	ZL	180	23 101	R128,34	23 101	128	22 358	124	21 308	118	18 160	101	49	2
133	AEJEA	BS	SGT	LCS	L	B04I	ZL	160	21 675	R135,47	21 675	135	20 963	131	19 913	124	16 947	106	50	2
134	NLRTM	RS	TAW	CORE	L	A05D	PU	120	14 703	R122,53	12 647	105	11 571	96	10 418	87	4 250	35	50	2
135	NLRTM	RS	TAW	CORE	L	B04I	CB	160	24 031	R150,20	21 975	137	20 751	130	19 597	122	12 951	81	49	2
136	NLRTM	WS	PSE	HOEKS	L	A05D	HS	120	23 241	R193,67	21 082	176	19 872	166	18 719	156	13 075	109	50	2
137	NLRTM	BS	SGT	LCS	XL	B04I	PC	170	30 909	R181,82	28 852	170	27 518	162	26 365	155	20 472	120	49	2
138	NLRTM	WS	GRP	TOPFR	L	B04I	CB	180	20 528	R114,04	18 369	102	17 162	95	16 008	89	9 542	53	49	2
139	NLRTM	RS	TAW	CORE	L	B04I	PC	170	-235	-R1,38	-2 394	-14	-3 591	-21	-4 744	-28	-11 590	-68	50	2
140	NLRTM	WS	PSE	HOEKS	L	B04I	CB	180	25 774	R143,19	23 615	131	22 313	124	21 160	118	15 111	84	48	2
141	NLRTM	BG	BGM		XL	B04I	PC	180	19 892	R110,51	17 754	99	16 559	92	15 405	86	10 512	58	50	2
142	GBLGP	WS	ELS	TOPFR	L	A05D	HS	120	22 841	R190,34	20 664	172	19 400	162	18 246	152	12 142	101	49	1
143	GBLGP	WS	PSE	HOEKS	L	A05D	HS	120	22 841	R190,34	20 664	172	19 400	162	18 246	152	12 525	104	50	1
144	GBLGP	WS	GRP	TOPFR	L	A05D	HS	120	23 922	R199,35	21 744	181	20 476	171	19 323	161	13 221	110	49	1
145	MYPKG	BS	SGT	LCS	L	A05D	PL	115	24 599	R213,90	23 287	202	22 014	191	20 861	181	16 052	140	49	2
146	MYPKG	RS	RAL	TOPFR	L	A05D	PL	115	22 139	R192,51	20 827	181	19 594	170	18 440	160	12 564	109	50	2
147	ILASH	WS	PSE	HOEKS	L	A05D	PL	115		R,00	-4 017	-35	-5 406	-47	-6 645	-58	-14 567	-127	50	5
148	ILASH	RS	TAW	CORE	L	A05D	PL	115	28 538	R248,16	24 521	213	22 694	197	21 455	187	12 570	109	50	5
149	RULED	WS	PSE	HOEKS	XL	B04I	SZ	180	26 725	R148,47	26 725	148	25 598	142	25 104	139	22 059	123	51	4
150	AEJEA	BG	BGM		L	B04I	ZL	170	13 606	R80,03	11 790	69	10 942	64	9 721	57	5 439	32	50	3
151	HKHKG	RS	RAL	TOPFR	XL	B04I	SZ	180	49 951	R277,50	47 790	266	45 799	254	44 589	248	36 300	202	52	3
152	VNSGN	BS	SGT	LCS	XL	B04I	ZL	170	24 990	R147,00	22 434	132	21 394	126	20 172	119	14 005	82	50	4
153	VNSGN	BS	SGT	LCS	L	A05D	PL	115	16 905	R147,00	14 349	125	13 453	117	12 231	106	6 486	56	50	4
154	VNHPH	BS	SGT	LCS	XL	B04I	ZL	170	32 130	R189,00	30 136	177	29 022	171	27 800	164	22 121	130	50	3
155	QAHMD	WS	PSE	HOEKS	L	B04I	ZL	180	19 076	R105,98	19 076	106	18 659	104	18 659	104	16 906	94	51	6
156	QAHMD	BG	DBH		L	B04I	ZL	170	16 827	R98,98	16 827	99	16 220	95	15 170	89	13 196	78	51	6
157	GBLGP	WS	SGO	SUNW	L	A05D	HS	120	22 224	R185,20	20 162	168	18 966	158	17 813	148	12 489	104	51	3
158	GBLGP	WS	SGO	SUNW	L	B09D	NP	90	27 086	R300,95	25 023	278	23 753	264	22 599	251	16 962	188	50	3
159	NLRTM	RS	TAW	CORE	L	A05D	PU	115	16 701	R145,23	14 639	127	13 498	117	13 394	116	9 732	85	50	3
160	GBLGP	WS	PSE	HOEKS	L	A05D	HS	120	24 709	R205,91	22 543	188	21 259	177	20 105	168	14 394	120	51	3
161	NLRTM	BS	MLY	SNFL	L	B04I	CB	160	7 699	R48,12	5 534	35	4 560	28	3 407	21	-1 274	-8	51	3
162	GBLGP	RS	TAW	CORE	L	A05D	HS	115	21 941	R190,79	19 879	173	18 643	162	18 540	161	14 782	129	51	3
163	NLRTM	RS	TAW	CORE	L	B04I	PC	170	-2 123	-R12,49	-4 288	-25	-5 483	-32	-6 636	-39	-13 452	-79	50	3
164	NLRTM	BS	SGT	LCS	L	B04I	ZL	160	2 912	R18,20	746	5	-141	-1	-1 294	-8	-6 783	-42	50	3
165	NLRTM	BS	SGT	LCS	L	B04I	PC	160	4 745	R29,66	2 580	16	1 660	10	506	3	-5 016	-31	51	3
166	NLRTM	BG	DBH		L	B04I	ZL	170	16 486	R96,98	14 320	84	13 188	78	12 035	71	7 187	42	51	3
167	NLRTM	RS	FMS		L	A05D	UL	115	7 222	R62,80	4 797	42	3 835	33	2 681	23	-2 215	-19	51	3
168	NLRTM	BS	MLY	SNFL	L	A05D	PU	115	6 771	R58,88	4 345	38	3 392	29	2 238	19	-2 639	-23	51	3
169	CATOR	WS	PSE	HOEKS	L	A08D	HS	80	31 421	R392,76	27 475	343	26 401	330	26 297	329	20 943	262	52	4
170	CATOR	WS	PSE	HOEKS	L	A09D	PL	80	27 930	R349,12	23 984	300	22 964	287	22 861	286	17 562	220	52	4
171	CATOR	WS	SGO	SUNW	L	B08D	CB	102	33 385	R327,30	29 439	289	28 333	278	28 230	277	22 845	224	52	4
172	CATOR	WS	PSE	HOEKS	XL	B08D	SC	102	35 610	R349,12	31 665	310	30 524	299	30 087	295	23 128	227	51	4
173	CATOR	WS	PSE	HOEKS	L	B08D	CB	102	33 385	R327,30	29 439	289	28 095	275	26 942	264	19 063	187	49	4
174	CATOR	RS	EDL	HOEKS	XL	B08D	CB	102	35 610	R349,12	31 665	310	30 286	297	29 133	286	21 884	215	52	4
175	CATOR	RS	TAW	CORE	XL	B08D	CB	102	35 610	R349,12	31 665	310	30 286	297	29 133	286	20 190	198	52	4
176	CATOR	WS	PSE	HOEKS	XL	B08D	CB	102	33 813	R331,50	29 826	292	28 548	280	28 079	275	21 936	215	51	5
177	CATOR	WS	ARF	TOPFR	L	A08D	HS	80	31 824	R397,80	27 837	348	26 696	334	26 593	332	21 131	264	52	5
178	CATOR	RS	TAW	CORE	XL	B08D	SC	102	25 923	R254,15	21 936	215	20 904	205	20 410	200	12 408	122	52	5
179	CATOR	RS	TAW	CORE	L	B08D	CB	102	25 923	R254,15	21 936	215	20 904	205	20 410	200	12 408	122	52	5
180	CATOR	WS	PSE	HOEKS	XL	B08D	SC	102	33 813	R331,50	29 826	292	28 650	281	28 214	277	21 166	208	51	5

Table 3.21: Export data set 3

Shipment invoice no.	Arrival Point	Variety Group Code	Variety Code	Variety Licensor Code	Size Code	Outer Pack Code	Inner Pack Code	Quantity	Net Trade Amount (LCY)	Net Trade Price (LCY)	FOB	FOB (4,5kg)	DIP	DIP (4,5kg)	Ex-works	Ex-works (4,5kg)	PIB	PIB (4,5kg)	Harvest Week	Actual Arrival Week
181	MYPKG	WS	PSE	HOEKS	L	B04I	ZL	180	30 974	R172,08	29 612	165	28 201	157	27 048	150	21 681	120	49	5
182	MYPKG	RS	STL	HOEKS	XL	B04I	ZL	180	30 974	R172,08	29 612	165	28 337	157	27 867	155	24 354	135	50	5
183	MYPKG	RS	STL	HOEKS	L	A05D	PL	120	22 370	R186,42	21 008	175	19 887	166	19 418	162	16 104	134	51	5
184	ILASH	WS	PSE	HOEKS	L	A05D	PL	115	19 047	R165,63	14 933	130	13 284	116	12 045	105	3 954	34	50	6
185	ILASH	WS	PSE	HOEKS	L	B04I	ZL	170	27 181	R159,89	23 067	136	21 273	125	20 759	122	12 965	76	50	6
186	ILASH	RS	TAW	CORE	L	A05D	PL	115	28 942	R251,67	24 827	216	20 443	178	19 204	167	7 645	66	51	6
187	MYPKG	BS	MLY	SNFL	L	A05D	PL	115	10 307	R89,62	8 945	78	7 923	69	6 769	59	2 876	25	51	4
188	MYPKG	RS	STL	HOEKS	L	A05D	PL	120	22 370	R186,42	21 073	176	19 951	166	19 481	162	16 231	135	52	4
189	MYPKG	RS	RAL	TOPFR	XL	B04I	ZL	180	33 556	R186,42	32 193	179	30 736	171	29 583	164	21 073	117	50	5
190	MYPKG	RS	RAL	TOPFR	L	A05D	PL	115	22 263	R193,59	20 901	182	19 645	171	18 492	161	11 434	99	51	5
191	MYPKG	BS	SGT	LCS	L	A05D	PL	115	22 263	R193,59	20 901	182	19 645	171	18 492	161	13 650	119	50	5
192	MYPKG	RS	RAL	TOPFR	XL	B04I	SZ	180	33 556	R186,42	32 258	179	30 800	171	29 646	165	21 200	118	51	5
193	MYPKG	BS	SGT	LCS	XL	B04I	ZL	170	34 129	R200,76	32 832	193	31 363	184	30 210	178	24 941	147	49	5
194	RULED	BG	BGM		L	B04I	ZL	170	13 268	R78,05	13 268	78	12 147	71	10 994	65	8 323	49	50	3
195	RULED	BS	SGT	LCS	L	B04I	ZL	160	23 839	R149,00	23 839	149	22 527	141	21 373	134	17 624	110	50	3
196	TWKHH	WS	PSE	HOEKS	XL	B04D	ZL	170	31 746	R186,74	28 918	170	27 668	163	27 668	163	23 359	137	52	3
197	QAHMD	WG	VIC		L	B04I	PC	180	14 559	R80,88	12 448	69	11 348	63	10 194	57	5 423	30	52	8
198	QAHMD	BG	DBH		L	B04I	ZL	170	13 750	R80,88	11 639	68	10 553	62	9 400	55	4 652	27	51	8
199	QAHMD	RS	CSS		L	B04I	ZL	170	13 750	R80,88	11 639	68	10 553	62	9 400	55	4 652	27	1	8
200	ILASH	RS	TAW	CORE	L	A05D	PL	115	27 875	R242,39	23 708	206	21 899	190	20 660	180	11 413	99	51	7
201	ILASH	RS	TAW	CORE	XL	B04I	ZL	170	43 214	R254,20	39 047	230	36 963	217	35 724	210	25 465	150	51	7
202	ILASH	WS	PSE	HOEKS	L	A05D	PL	115	20 695	R179,96	16 528	144	14 850	129	14 373	125	7 820	68	51	7
203	ILASH	WS	PSE	HOEKS	XL	B04I	ZL	170	28 184	R165,79	24 017	141	22 205	131	21 728	128	15 042	88	51	7
204	HKHKG	RS	RAL	TOPFR	XL	B04I	ZL	180	25 524	R141,80	23 298	129	21 499	119	19 944	111	9 876	55	52	5
205	GBLGP	RS	RAL	TOPFR	L	A05D	HS	120	22 308	R185,90	19 848	165	18 851	157	18 415	153	14 160	118	52	5
206	GBLGP	WS	THS		L	A05D	HS	115	21 379	R185,90	18 918	165	17 699	154	16 546	144	11 357	99	1	5
207	NLRTM	RS	TAW	CORE	L	A05D	PU	120	16 718	R139,32	14 258	119	13 122	109	11 968	100	5 341	45	52	4
208	NLRTM	BG	DBH		XL	B04I	PC	180	18 438	R102,43	15 978	89	15 050	84	14 613	81	10 382	58	52	4
209	NLRTM	BS	MLY	SNFL	L	B04I	CB	160	9 498	R59,36	7 037	44	6 033	38	4 880	31	-125	-1	52	4
210	NLRTM	RS	TAW	CORE	XL	B04I	PC	180	15 225	R84,58	12 882	72	12 012	67	11 575	64	5 451	30	52	4
211	NLRTM	RS	TIM	SNFL	XL	B04I	CB	180	20 961	R116,45	18 562	103	17 350	96	16 197	90	11 025	61	52	4
212	NLRTM	WG	VIC		L	B04I	PC	180	24 334	R135,19	21 991	122	20 717	115	19 564	109	14 387	80	1	4
213	NLRTM	WS	PSE	HOEKS	L	A05D	HS	120	26 337	R219,47	23 942	200	22 868	191	22 432	187	17 407	145	52	4
214	NLRTM	RS	RAL	TOPFR	XL	B04I	PC	180	30 700	R170,56	28 305	157	27 153	151	26 717	148	22 326	124	52	4
215	NLRTM	WS	PSE	HOEKS	L	A05D	PU	120	24 387	R203,22	21 992	183	20 953	175	20 459	170	15 334	128	52	4
216	GBLGP	WS	PSE	HOEKS	L	A05D	HS	120	26 055	R217,12	23 594	197	22 289	186	21 135	176	15 097	126	51	5
217	CATOR	WS	THS		L	A08D	HS	80	29 838	R372,98	25 837	323	24 733	309	24 629	308	19 189	240	52	5
218	CATOR	WS	THS		L	B08D	CB	102	32 393	R317,58	28 392	278	27 242	267	27 139	266	21 653	212	52	5
219	CATOR	RS	CSS		L	B08D	SC	102	33 568	R329,10	29 587	290	28 177	276	27 023	265	20 070	197	1	5
220	CATOR	RS	TIM	SNFL	L	A08D	HS	80	32 471	R405,89	28 470	356	27 318	341	27 215	340	21 728	272	52	5
221	CATOR	WS	THS		L	A09D	PL	80	28 083	R351,04	24 102	301	23 028	288	22 924	287	17 535	219	52	5
222	CATOR	RS	KRI	SNFL	L	A09D	PL	80	28 083	R351,04	24 082	301	23 009	288	22 905	286	17 497	219	52	5
223	CATOR	RS	TAW	CORE	XL	B08D	ZL	102	23 498	R230,37	19 497	191	18 271	179	17 118	168	8 252	81	51	5
224	CATOR	WS	I10	IFG	L	B08D	CB	102	38 044	R372,98	34 043	334	32 553	319	31 400	308	24 347	239	52	5
225	RULED	BG	DBH		XL	B04I	SZ	180	20 405	R113,36	20 405	113	19 390	108	18 954	105	17 096	95	1	5
226	RULED	RS	CSS		XL	B04I	ZL	170	26 498	R155,87	26 498	156	25 134	148	23 981	141	21 067	124	1	5
227	RULED	WS	THS		XL	B04I	ZL	180	28 057	R155,87	28 057	156	26 665	148	25 511	142	22 559	125	52	5
228	AEJEA	BG	DBH		L	B04I	SZ	180	18 688	R103,82	16 818	93	15 874	88	15 437	86	11 780	65	1	5
229	AEJEA	RG	RGB		L	B04I	ZL	170	17 649	R103,82	15 780	93	14 616	86	13 463	79	8 879	52	1	5
230	AEJEA	BG	DBH		L	B04I	SZ	180	19 183	R106,57	19 183	107	18 763	104	18 763	104	18 016	100	52	5
231	AEJEA	RS	CSS		L	B04I	SZ	170	21 741	R127,89	21 741	128	21 027	124	19 977	118	17 896	105	1	5
232	SADMM	BG	DBH		L	B04I	ZL	170	14 494	R85,26	14 494	85	13 938	82	12 888	76	10 965	65	52	5
233	SADMM	RS	CSS		XL	B04I	ZL	170	21 741	R127,89	21 741	128	21 027	124	19 977	118	17 896	105	1	5
234	SADMM	RG	RGB		L	B04I	ZL	170	16 910	R99,47	16 910	99	16 301	96	15 251	90	13 276	78	1	5
235	SADMM	RS	RAL	TOPFR	XL	B04I	ZL	180	23 020	R127,89	23 020	128	22 516	125	22 516	125	17 593	98	52	5
236	SADMM	RS	RAL	TOPFR	XL	B04I	SZ	180	23 020	R127,89	23 020	128	22 516	125	22 516	125	17 593	98	52	5
237	GBLGP	RS	CSS		L	A05D	HS	120	19 193	R159,94	16 838	140	15 658	130	14 504	121	9 455	79	1	5
238	NLRTM	RS	TAW	CORE	XL	B04I	ZL	180	21 309	R118,38	18 849	105	17 631	98	16 477	92	9 192	51	51	4
239	HKHKG	RS	RAL	TOPFR	XL	B04I	ZL	180	25 925	R144,03	23 671	132	21 865	121	20 309	113	10 143	56	1	6
240	HKHKG	RS	CSS		XL	B04I	ZL	170	22 022	R129,54	19 513	115	17 782	105	15 410	91	8 402	49	1	6
241	GBLGP	RS	TAW	CORE	XL	A05D	HS	115	19 854	R172,65	17 394	151	16 440	143	15 946	139	9 018	78	1	5
242	RULED	WG	VIC		XL	B04I	PC	180	25 902	R143,90	25 902	144	24 549	136	23 396	130	20 483	114	1	7
243	RULED	BG	DBH		XL	B04I	SZ	180	25 902	R143,90	25 902	144	24 787	138	24 627	137	22 944	127	52	7
244	RULED	BS	SGT	LCS	XL	B04I	ZL	180	29 787	R165,49	29 538	164	28 357	158	28 164	156	25 125	140	52	7
245	NLRTM	WS	I10	IFG	L	A05D	PU	120	24 045	R200,38	21 646	180	20 376	170	19 223	160	13 908	116	1	4
246	NLRTM	RS	TAW	CORE	XL	A05D	PL	115	19 817	R172,32	17 418	151	16 463	143	15 969	139	10 294	90	1	4
247	ILASH	WS	ARF	TOPFR	L	A05D	PL	120	21 222	R176,85	16 989	142	13 275	111	13 075	109	4 697	39	52	8
248	ILASH	WS	THS		L	A05D	PL	120	21 222	R176,85	16 989	142	13 275	111	13 075	109	4 697	39	52	8
249	NLRTM	RS	TAW	CORE	L	A05D	UL	120	18 015	R150,13	15 649	130	14 726	123	14 533	121	9 154	76	2	5
250	NLRTM	RS	TAW	CORE	XL	A05D	PU	115	20 739	R180,34	18 372	160	17 399	151	16 905	147	11 244	98	52	5
251	CGPNR	RG	RGB		L	B04I	ZL	170	22 100	R130,00	22 100	130	21 378	126	20 328	120	18 239	107	2	5
252	CATOR	RS	TAW	CORE	XL	B08D	CB	102	23 840	R233,73	19 848	195	18 854	185	18 360	180	10 362	102	52	7
253	CATOR	RS	CSS		L	B08D	SC	102	23 840	R233,73	19 848	195	18 615	183	17 462	171	10 675	105	1	7
254	CATOR	RS	TIM	SNFL	XL	B08D	ZL	102	36 328	R356,16	32 336	317	31 114	305	31 011	304	25 463	250	52	7
255	CATOR	RS	ALI	SNFL	L	A09D	PL	80	28 493	R356,16	24 500	306	23 419	293	23 316	291	17 908	224	52	7
256	CATOR	RS	I75	IFG	L	A08D	TS	80	32 945	R411,81	29 142	364	27 876	348	27 407	343	21 495	269	52	7
257	AEJEA	RS	CSS		L	B04I	ZL	170	22 738	R133,76	22 738	134	22 003	129	20 953	123	18 850	111	2	6
258	HKHKG	RS	RAL	TOPFR	XL	B04I	ZL	170	31 579	R185,76	29 336	173	27 426	161	26 987	159	18 092	106	52	7
259	MYPKG	WS	I10	IFG	L	B04I	ZL	180	36 187	R201,04	34 804	193	33 300	185	32 146	179	27 698	154	1	8
260	MYPKG	WS	I10	IFG	XL	A05D	PL	120	25 848	R215,40	24 464	204	23 145	193	21 992	183	17 775	148	2	8

Table 3.22: Export data set 4

Shipment invoice no.	Arrival Point	Variety Group Code	Variety Code	Variety Licensor Code	Size Code	Outer Pack Code	Inner Pack Code	Quantity	Net Trade Amount (LCY)	Net Trade Price (LCY)	FOB	FOB (4,5kg)	DIP	DIP (4,5kg)	Ex-works	Ex-works (4,5kg)	PIB	PIB (4,5kg)	Harvest Week	Actual Arrival Week
261	LKCMB	RG	RGB		L	B04I	ZL	170	20 140	R118,47	20 140	118	19 461	114	18 411	108	16 365	96	2	8
262	AEJEA	RG	RGB		L	B04I	ZL	170	15 569	R91,58	15 569	92	14 990	88	13 940	82	11 993	71	2	7
263	QAHMD	WS	THS		L	B04I	SZ	180	21 325	R118,47	21 325	118	20 858	116	20 858	116	20 064	111	52	8
264	QAHMD	RS	CSS		L	B04I	ZL	170	20 140	R118,47	20 140	118	19 461	114	18 411	108	16 365	96	2	8
265	QAHMD	BS	S34	LCS	XL	B04I	ZL	170	20 115	R118,33	20 115	118	19 437	114	18 387	108	15 389	91	2	8
266	AEJEA	RS	CSS		L	B04I	ZL	170	21 361	R125,65	21 361	126	20 655	121	19 605	115	17 532	103	52	7
267	MYPKG	BS	SGT	LCS	XL	A05D	PL	120	23 441	R195,35	21 920	183	20 885	174	20 692	172	16 834	140	1	7
268	MYPKG	WS	I10	IFG	L	A05D	PL	115	23 962	R208,37	22 440	195	21 158	184	20 004	174	15 691	136	52	7
269	MYPKG	BS	SGT	LCS	XL	B04I	ZL	180	33 626	R186,81	32 104	178	30 887	172	30 694	171	26 347	146	52	7
270	MYPKG	BS	S34	LCS	XL	A05D	PL	115	14 047	R122,15	12 525	109	11 422	99	10 269	89	5 420	47	1	7
271	MYPKG	BS	S34	LCS	XL	B04I	ZL	170	24 321	R143,07	22 800	134	21 513	127	20 359	120	15 048	89	1	7
272	MYPKG	RS	RAL	TOPFR	XL	B04I	ZL	180	27 159	R150,89	25 638	142	24 538	136	24 377	135	17 050	95	52	7
273	MYPKG	RS	RAL	TOPFR	XL	B04I	SZ	180	33 626	R186,81	32 104	178	30 649	170	29 495	164	20 819	116	51	7
274	SGSIN	BS	S34	LCS	XL	B04I	ZL	170	32 346	R190,27	30 897	182	29 463	173	28 310	167	22 925	135	1	7
275	SGSIN	RS	RAL	TOPFR	XL	B04I	ZL	180	32 956	R183,09	31 507	175	30 301	168	30 140	167	22 781	127	52	7
276	TWKEL	BS	SGT	LCS	XL	B04I	ZL	180	18 094	R100,52	15 331	85	13 546	75	13 070	73	6 807	38	1	9
277	VNSGN	BS	S34	LCS	XL	B04I	ZL	170	35 397	R208,22	32 158	189	30 198	178	28 973	170	21 199	125	1	8
278	SGSIN	WS	I10	IFG	XL	B04I	ZL	180	26 046	R144,70	24 593	137	23 276	129	21 007	117	15 561	86	1	6
279	SGSIN	BS	S34	LCS	XL	B04I	ZL	170	34 439	R202,58	32 986	194	31 514	185	29 246	172	22 704	134	1	6
280	SGSIN	RS	I75	IFG	XL	B04I	SZ	170	34 439	R202,58	32 986	194	31 514	185	30 296	178	25 756	152	1	6
281	MYPKG	RS	I75	IFG	XL	A05D	SZ	115	23 297	R202,58	21 844	190	20 572	179	19 353	168	15 054	131	1	7
282	MYPKG	RS	RAL	TOPFR	L	A05D	PL	120	21 705	R180,88	20 252	169	19 009	158	17 790	148	10 427	87	1	7
283	MYPKG	RS	I75	IFG	XL	B04I	SZ	170	30 749	R180,88	29 296	172	27 891	164	26 672	157	22 198	131	1	7
284	VNSGN	BS	S34	LCS	XL	B04I	ZL	170	35 669	R209,82	32 783	193	30 812	181	29 659	174	22 300	131	2	7
285	HKHKG	BS	SGT	LCS	XL	B04I	ZL	180	16 671	R92,62	14 496	81	12 725	71	11 351	63	4 792	27	52	7
286	CATOR	RS	ALI	SNFL	L	B08D	CB	102	33 660	R330,00	29 609	290	28 437	279	28 333	278	22 776	223	52	8
287	CATOR	RS	SGE	LCS	L	B08D	ZL	102	16 830	R165,00	12 779	125	11 675	114	10 521	103	2 789	27	3	8
288	CATOR	RS	TIM	SNFL	L	B08D	CB	102	26 928	R264,00	22 877	224	21 589	212	20 436	200	13 535	133	1	8
289	CATOR	RS	I75	IFG	L	B08D	CB	102	28 050	R275,00	23 999	235	22 929	225	22 768	223	17 078	167	52	8
290	CATOR	RS	TAW	CORE	XL	B08D	CB	102	24 684	R242,00	20 633	202	19 522	191	19 028	187	10 276	101	52	8
291	RULED	RG	RGB		L	B04I	ZL	170	17 539	R103,17	17 539	103	16 917	100	15 867	93	13 877	82	2	8
292	RULED	RS	CSS		L	B04I	ZL	170	21 229	R124,88	21 229	125	20 526	121	19 476	115	17 406	102	2	8
293	RULED	BG	DBH		L	B04I	SZ	180	20 524	R114,02	20 524	114	20 075	112	20 075	112	19 298	107	3	8
294	RULED	BS	S34	LCS	XL	B04I	ZL	170	24 599	R144,70	24 599	145	23 270	137	22 117	130	18 285	108	2	8
295	RULED	RS	CSS		XL	B04I	ZL	170	20 368	R119,81	20 368	120	19 116	112	17 963	106	15 160	89	2	8
296	RULED	BG	DBH		XL	B04I	SZ	180	24 093	R133,85	24 093	134	23 011	128	22 850	127	21 201	118	2	8
297	NLRTM	BG	DBH		L	B04I	PC	180	19 716	R109,53	17 346	96	16 394	91	15 958	89	11 794	66	52	6
298	NLRTM	WS	I10	IFG	L	A05D	PU	120	25 855	R215,46	23 598	197	22 295	186	21 141	176	16 066	134	2	6
299	NLRTM	WS	I10	IFG	L	A05D	HS	120	25 855	R215,46	23 598	197	22 295	186	21 141	176	16 066	134	2	6
300	NLRTM	WS	THS		L	A05D	HS	120	22 982	R191,52	20 725	173	19 711	164	19 551	163	15 758	131	3	6
301	ILASH	WS	I10	IFG	L	A05D	PL	120	31 632	R263,60	27 393	228	22 725	189	21 487	179	10 980	91	2	9
302	AEJEA	RS	CSS		L	B04I	ZL	170	11 685	R68,73	9 795	58	8 743	51	7 589	45	3 097	18	3	8
303	AEJEA	RG	RGB		L	B04I	ZL	170	11 660	R68,59	9 771	57	8 719	51	7 565	45	3 073	18	3	8
304	AEJEA	RS	CSS		L	B04I	ZL	170	19 064	R112,14	19 064	112	18 409	108	17 359	102	15 336	90	3	8
305	NLRTM	RS	TIM	SNFL	L	B04I	CB	180	20 306	R112,81	17 778	99	16 581	92	15 427	86	10 142	56	1	6
306	NLRTM	BS	S34	LCS	XL	B04I	ZL	170	13 751	R80,89	11 223	66	10 145	60	8 992	53	2 883	17	2	6
307	NLRTM	RS	TAW	CORE	XL	B04I	PC	180	20 306	R112,81	17 778	99	16 819	93	16 658	93	10 519	58	2	6
308	NLRTM	RS	TAW	CORE	XL	A05D	PL	115	19 161	R166,62	16 633	145	15 693	136	15 199	132	9 401	82	2	6
309	NLRTM	BS	S34	LCS	XL	A05D	PL	115	19 161	R166,62	16 633	145	15 455	134	14 301	124	8 370	73	2	6
310	USNYC	RS	SGE	LCS	XL	B08D	ZL	102	24 047	R235,75	19 886	195	18 148	178	16 923	166	8 376	82	2	7
311	USNYC	RS	SGE	LCS	L	A08D	PU	80	17 089	R213,61	12 928	162	11 315	141	10 090	126	1 901	24	2	7
312	USNYC	RS	SGE	LCS	L	A08D	PU	80	17 089	R213,61	12 928	162	11 315	141	10 090	126	1 901	24	2	7
313	REPDG	RS	CSS		L	B04I	ZL	170	20 448	R120,29	20 448	120	19 763	116	18 713	110	16 660	98	4	7
314	REPDG	RS	CSS		L	A05D	PU	115	14 420	R125,39	14 420	125	13 865	121	12 815	111	10 935	95	4	7
315	VNHPH	BS	S34	LCS	XL	B04I	ZL	170	35 940	R211,41	33 085	195	31 108	183	29 955	176	22 621	133	2	9
316	MYPKG	WS	I10	IFG	L	B04I	ZL	180	36 464	R202,58	35 012	195	33 504	186	31 235	174	25 423	141	1	7
317	VNSGN	BS	SGT	LCS	XL	B04I	ZL	180	18 502	R102,79	15 504	86	13 716	76	13 576	75	7 412	41	52	7
318	MYPKG	WS	S35	LCS	L	A05D	PL	115	17 473	R151,94	16 020	139	14 854	129	12 585	109	6 627	58	2	7
319	MYPKG	WS	S35	LCS	XL	B04I	ZL	180	28 651	R159,17	27 198	151	25 833	144	23 564	131	17 063	95	2	7
320	TWKEL	BS	I17	IFG	XL	B04I	ZL	180	21 651	R120,29	18 981	105	17 500	97	17 006	94	11 955	66	3	9
321	RULED	BG	DBH		XL	B04I	SZ	180	26 244	R145,80	26 244	146	25 123	140	24 962	139	23 274	129	2	9
322	RULED	WS	THS		XL	B04I	ZL	180	26 244	R145,80	26 244	146	25 123	140	24 962	139	23 274	129	3	9
323	RULED	RS	CSS		XL	B04I	ZL	170	26 025	R153,09	26 025	153	24 670	145	23 517	138	20 612	121	2	9
324	NLRTM	BS	S34	LCS	XL	A05D	PL	115	10 983	R95,50	8 479	74	7 449	65	6 296	55	538	5	2	7
325	NLRTM	BS	SGT	LCS	L	A05D	PL	120	11 595	R96,63	9 092	76	8 186	68	7 717	64	2 861	24	2	7
326	GBLGP	WS	I10	IFG	L	A05D	HS	120	25 919	R215,99	23 494	196	22 431	187	22 270	186	18 260	152	52	8
327	NLRTM	RS	KRI	SNFL	R	A05D	PU	120	18 972	R158,10	16 469	137	15 293	127	14 140	118	8 947	75	3	7
328	NLRTM	RS	TAW	CORE	L	B04I	PC	180	17 218	R95,65	14 715	82	13 811	77	13 650	76	7 578	42	3	7
329	NLRTM	RS	CSS		L	B04I	CB	170	23 005	R135,33	20 502	121	19 255	113	18 102	106	12 801	75	3	7
330	NLRTM	BS	IF6	IFG	L	A05D	CS	120	11 376	R94,80	8 872	74	8 073	67	7 913	66	4 088	34	52	7
331	NLRTM	BS	IF6	IFG	L	A05D	PL	120	7 423	R61,86	5 039	42	4 072	34	2 919	24	-1 946	-16	2	7
332	NLRTM	RS	I75	IFG	XL	B04I	PW	170	12 593	R74,08	10 209	60	9 149	54	9 046	53	5 101	30	3	7
333	NLRTM	RS	TAW	CORE	L	A05D	UL	120	19 586	R163,22	17 202	143	16 251	135	16 058	134	10 615	88	2	7
334	CMDLA	RG	RGB		L	B04I	ZL	170	22 100	R130,00	22 100	130	21 378	126	20 328	120	18 239	107	2	7
335	NLRTM	BS	S34	LCS	XL	B04I	PC	170	21 855	R128,56	19 309	114	18 083	106	16 929	100	10 654	63	3	8
336	QAHMD	RS	CSS		L	B04I	ZL	170	18 002	R105,89	15 866	93	14 703	86	13 550	80	8 701	51	4	12
337	QAHMD	WS	THS		L	B04I	SZ	180	20 393	R113,30	18 258	101	17 290	96	17 129	95	13 459	75	3	12
338	QAHMD	RG	RGB		L	B04I	ZL	170	16 743	R98,49	14 607	86	13 467	79	12 313	72	7 487	44	3	12
339	QAHMD	BG	DBH		L	B04I	SZ	180	17 728	R98,49	15 592	87	14 672	82	14 236	79	10 338	57	3	12
340	HKHKG	WS	I10	IFG	XXL	B04I	ZL	180	47 965	R266,47	45 645	254	43 442	241	42 223	235	36 074	200	52	8
341	HKHKG	BS	SGT	LCS	L	B04I	ZL	180	28 528	R158,49	26 208	146	24 224	135	22 849	127	15 932	89	52	8
342	HKHKG	BS	S34	LCS	XL	A05D	PL	115	19 586	R170,32	19 586	170	18 919	165	17 869	155	15 161	132	3	8
343	ILASH	RS	TAW	CORE	L	A05D	PL	115	29 890	R259,92	25 461	221	20 130	175	19 952	173	8 144	71	2	11
344	ILASH	BS	SGT	LCS	L	A05D	PL	115	29 890	R259,92	25 461	221	19 998	174	19 858	173	8 880	77	3	11
345	RULED	WS	RGT		XL	B04I	ZL	180	23 406	R130,03	23 406	130	22 337	124	22 144	123	20 475	114	3	8
346	RULED	RS	CSS		L	B04I	ZL	170	20 142	R118,48	16 933	100	15 752	93	14 598	86	8 658	51	4	8
347	RULED	BS	S34	LCS	XL	B04I	ZL	170	20 142	R118,48	16 933	100	15 752	93	14 598	86	7 706	45	4	8
348	NLRTM	RS	CSS		L	A05D	PU	115	18 054	R156,99	15 628	136	14 468	126	13 314	116	8 219	71	4	7
349	NLRTM	BS	S34	LCS	XL	B04I	PC	170	12 808	R75,34	10 382	61	9 319	55	8 166	48	2 174	13	3	7
350	NLRTM	WS	I10	IFG	L	A05D	PU	120	26 455	R220,46	24 143	201	22 830	190	21 676	181	16 537	138	3	7

Table 3.23: Export data set 5

Shipment invoice no.	Arrival Point	Variety Group Code	Variety Code	Variety Licensor Code	Size Code	Outer Pack Code	Inner Pack Code	Quantity	Net Trade Amount (LCY)	Net Trade Price (LCY)	FOB	FOB (4,5kg)	DIP	DIP (4,5kg)	Ex-works	Ex-works (4,5kg)	PIB	PIB (4,5kg)	Harvest Week	Actual Arrival Week
351	NLRTM	WS	I10	IFG	L	A05D	HS	120	26 455	R220,46	24 143	201	23 068	192	22 907	191	18 998	158	52	7
352	NLRTM	WS	THS		L	A05D	HS	120	23 515	R195,96	21 203	177	19 943	166	18 790	157	13 703	114	3	7
353	SGSIN	RS	CSS		L	A05D	LB	115	14 815	R128,83	14 815	129	14 252	124	13 202	115	11 314	98	52	8
354	VNHPH	WS	I10	IFG	XL	B04I	ZL	180	19 719	R109,55	17 385	97	16 437	91	16 276	90	12 427	69	52	10
355	VNHPH	BS	S34	LCS	XL	B04I	ZL	170	13 486	R79,33	11 153	66	10 078	59	8 924	52	3 013	18	3	10
356	MYPKG	WS	S35	LCS	L	A05D	PL	115	13 782	R119,84	12 374	108	11 274	98	10 121	88	5 389	47	3	8
357	MYPKG	WS	S35	LCS	XL	B04I	ZL	180	22 919	R127,33	21 512	120	20 250	113	19 097	106	13 859	77	3	8
358	MYPKG	BS	S34	LCS	XL	A05D	PL	115	12 920	R112,35	11 512	100	10 428	91	9 274	81	4 557	40	2	8
359	MYPKG	BS	S34	LCS	XL	B04I	ZL	170	19 100	R112,35	17 676	104	16 482	97	15 329	90	10 209	60	3	8
360	MYPKG	BS	IF6	IFG	XL	B04I	SZ	180	28 312	R157,29	26 889	149	25 768	143	25 607	142	22 495	125	52	8
361	SGSIN	BS	S34	LCS	XL	A05D	PL	115	18 088	R157,29	16 733	146	15 553	135	14 400	125	9 640	84	3	8
362	QAHMD	WS	THS		L	B04I	SZ	180	19 819	R110,10	19 819	110	19 384	108	19 384	108	18 624	103	4	11
363	QAHMD	RS	CSS		L	B04I	ZL	170	17 444	R102,61	17 444	103	16 824	99	15 774	93	13 787	81	4	11
364	QAHMD	BS	S34	LCS	XL	B04I	ZL	170	16 808	R98,87	16 808	99	16 201	95	15 151	89	12 226	72	3	11
365	AEJEA	WS	THS		L	B04I	SZ	180	22 245	R123,59	22 245	124	21 758	121	21 758	121	20 944	116	4	8
366	AEJEA	BS	S34	LCS	XL	B04I	ZL	170	20 373	R119,84	20 373	120	19 689	116	18 639	110	15 635	92	3	8
367	HKHKG	WS	I10	IFG	XL	B04I	ZL	180	50 551	R280,84	48 245	268	45 996	256	45 818	255	40 678	226	4	9
368	USNYC	RS	SGE	LCS	L	A08D	PL	80	15 980	R199,75	11 757	147	10 166	127	8 941	112	713	9	4	8
369	USNYC	RS	SGE	LCS	XL	B08D	ZL	102	27 488	R269,49	23 265	228	21 468	210	20 243	198	11 573	113	3	8
370	CATOR	RS	TIM	SNFL	L	B08D	CB	102	34 272	R336,00	30 135	295	28 717	282	27 563	270	20 447	200	3	9
371	CATOR	RS	KRI	SNFL	L	B08D	CB	102	34 272	R336,00	30 135	295	28 717	282	27 563	270	20 447	200	4	9
372	CATOR	RS	I75	IFG	L	A08D	HS	80	33 152	R414,40	29 015	363	27 855	348	27 694	346	21 863	273	52	9
373	CATOR	RS	I75	IFG	L	A08D	TS	80	33 152	R414,40	29 015	363	27 855	348	27 694	346	21 863	273	52	9
374	CATOR	RS	I75	IFG	L	B08D	CB	102	26 275	R257,60	22 138	217	21 102	207	20 941	205	15 236	149	52	9
375	CATOR	RS	TIM	SNFL	L	B08D	SC	102	25 133	R246,40	20 995	206	19 880	195	19 386	190	13 231	130	5	9
376	CATOR	BS	I17	IFG	XL	B08D	CB	102	34 272	R336,00	30 135	295	28 853	283	28 359	278	22 038	216	4	9
377	RULED	BS	IF6	IFG	XL	B04I	ZL	180	33 480	R186,00	33 480	186	32 229	179	32 069	178	30 251	168	52	9
378	ILASH	RS	KRI	SNFL	L	A05D	PL	115	23 700	R206,09	18 463	161	16 752	146	15 513	135	6 971	61	3	12
379	ILASH	RS	TAW	CORE	XL	B04I	ZL	170	36 047	R212,04	30 810	181	28 877	170	28 699	169	18 930	111	52	12
380	ILASH	RS	KRI	SNFL	XL	B04I	ZL	170	39 209	R230,64	33 890	199	31 902	188	30 663	180	21 721	128	3	12
381	ILASH	RS	TAW	CORE	L	A05D	PL	115	22 845	R198,65	17 526	152	16 241	141	16 063	140	7 405	64	52	12
382	NLRTM	RS	KRI	SNFL	R	A05D	PU	120	17 709	R147,57	15 248	127	14 097	117	12 944	108	7 818	65	4	8
383	NLRTM	RS	CSS		L	A05D	PU	115	18 737	R162,93	16 277	142	15 107	131	13 954	121	8 815	77	4	8
384	NLRTM	RS	KRI	SNFL	XL	B04I	ZL	170	19 567	R115,10	17 107	101	15 924	94	14 770	87	9 576	56	4	8
385	NLRTM	BS	S34	LCS	XL	A05D	PL	115	14 921	R129,75	12 461	108	11 361	99	10 207	89	4 422	38	3	8
386	NLRTM	BS	IF6	IFG	L	A05D	CS	120	9 687	R80,72	7 227	60	6 460	54	6 299	52	2 551	21	52	8
387	NLRTM	BS	S34	LCS	XL	B04I	ZL	170	8 881	R52,24	6 538	38	5 548	33	4 394	26	-1 442	-8	3	8
388	NLRTM	WS	THS		L	B04I	SZ	180	21 046	R116,92	18 703	104	17 731	99	17 538	97	13 622	76	4	8
389	NLRTM	RG	RGB		L	B04I	ZL	170	8 881	R52,24	6 538	38	5 548	33	4 394	26	-490	-3	3	8
390	NLRTM	BG	DBH		L	B04I	SZ	180	18 318	R101,77	15 975	89	15 051	84	14 890	83	11 055	61	52	8
391	NLRTM	RS	CSS		L	B04I	CB	170	22 486	R132,27	20 026	118	18 790	111	17 637	104	12 389	73	4	8
392	GBLGP	WS	I10	IFG	L	A05D	HS	120	26 396	R219,96	23 884	199	22 815	190	22 655	189	18 553	155	4	9
393	GBLGP	WS	I10	IFG	L	B09D	NP	90	31 744	R352,72	29 233	325	28 069	312	27 908	310	23 664	263	52	9
394	GBLGP	WS	S35	LCS	XL	B09D	NP	90	31 744	R352,72	29 119	324	27 957	311	27 764	308	22 369	249	5	9
395	GBLGP	RS	TIM	SNFL	L	A05D	HS	115	22 287	R193,80	19 649	171	18 657	162	18 163	158	13 684	119	5	9
396	NLRTM	RS	TIM	SNFL	L	A05D	PU	115	20 229	R175,90	17 591	153	16 534	144	16 040	139	11 495	100	5	9
397	NLRTM	RS	KRI	SNFL	XL	B04I	ZL	170	26 414	R155,38	23 777	140	22 472	132	21 319	125	15 826	93	4	9
398	NLRTM	RS	TAW	CORE	L	B04I	ZL	180	23 861	R132,56	21 224	118	20 204	112	20 043	111	13 656	76	52	9
399	NLRTM	BS	S34	LCS	XL	B04I	ZL	170	5 729	R33,70	3 091	18	2 163	13	1 010	6	-5 058	-30	4	9
400	NLRTM	BS	IF6	IFG	L	A05D	CS	120	16 645	R138,71	14 008	117	13 118	109	12 957	108	8 908	74	5	9
401	NLRTM	WS	S35	LCS	L	A05D	HS	120	26 649	R222,08	24 011	200	22 941	191	22 748	190	17 739	148	5	9
402	NLRTM	WS	SDC		L	A05D	UL	120		R,00	-2 638	-22	-3 279	-27	-3 472	-29	-7 305	-61	5	9
403	ILASH	RS	KRI	SNFL	L	A05D	PL	115	27 006	R234,83	21 728	189	19 957	174	18 719	163	10 076	88	4	13
404	ILASH	RS	TAW	CORE	L	A05D	PL	115	26 148	R227,38	20 870	181	19 115	166	18 937	165	9 846	86	52	13
405	ILASH	BS	ATR		L	A05D	PL	115	30 092	R261,67	24 814	216	19 474	169	19 313	168	8 178	71	5	13
406	RULED	BS	IF6	IFG	XL	B04I	ZL	180	28 180	R156,56	28 180	157	27 026	150	26 865	149	25 143	140	4	12
407	RULED	BS	ATR		XL	B04I	SZ	180	22 812	R126,74	22 812	127	21 756	121	21 595	120	19 971	111	5	12
408	RULED	RS	CSS		XL	B04I	ZL	180	25 496	R141,65	25 496	142	24 289	135	23 819	132	21 912	122	6	12
409	NLRTM	BS	I17	IFG	L	A05D	PU	120	21 902	R182,51	19 468	162	18 478	154	18 318	153	14 372	120	6	9
410	NLRTM	RS	SGE	LCS	L	A05D	UL	115	18 223	R158,46	15 789	137	14 628	127	13 475	117	7 656	67	6	9
411	USNYC	RS	I75	IFG	L	A08D	HS	80	26 245	R328,06	21 911	274	20 138	252	19 959	249	13 300	166	52	10
412	USNYC	RS	SGE	LCS	L	A08D	UL	80	15 634	R195,42	11 300	141	9 719	121	8 494	106	165	2	5	10
413	USNYC	RS	SGE	LCS	L	B08D	ZL	102	18 934	R185,63	14 601	143	12 961	127	11 736	115	3 114	31	4	10
414	USNYC	RS	SGE	LCS	L	A08D	PL	80	347	R4,34	-3 987	-50	-5 716	-71	-6 941	-87	-15 419	-193	4	10
415	CATOR	RS	TIM	SNFL	L	B08D	SC	102	27 491	R269,52	23 359	229	22 201	218	21 707	213	15 515	152	5	10
416	CATOR	WS	I10	IFG	XL	A08D	TS	80	34 139	R426,74	30 007	375	28 830	360	28 669	358	22 826	285	5	10
417	CATOR	RS	I75	IFG	L	A08D	TS	80	33 241	R415,51	29 109	364	27 948	349	27 787	347	21 960	274	5	10
418	CATOR	RS	I75	IFG	L	B08D	CB	102	22 909	R224,60	18 777	184	17 804	175	17 644	173	11 970	117	5	10
419	CATOR	RS	ALI	SNFL	L	B08D	CB	102	22 909	R224,60	18 777	184	17 702	174	17 208	169	11 099	109	6	10
420	GBLGP	RS	CSS		L	A05D	HS	120	23 448	R195,40	20 568	171	19 560	163	19 399	162	14 988	125	6	10
421	GBLGP	WS	I10	IFG	L	B09D	NP	90	32 007	R355,63	29 121	324	27 959	311	27 798	309	23 183	258	5	10
422	GBLGP	WS	S35	LCS	L	A05D	HS	120	26 613	R221,78	23 728	198	22 663	189	22 502	188	17 283	144	52	10
423	GBLGP	WS	S35	LCS	XL	B09D	NP	90	32 007	R355,63	29 121	324	27 959	311	27 766	309	22 111	246	52	10
424	GBLGP	RS	TIM	SNFL	L	A05D	HS	115	22 471	R195,40	19 591	170	18 498	161	18 004	157	13 181	115	5	10
425	USNYC	RS	SGE	LCS	L	B08D	CB	102	25 068	R245,76	20 705	203	18 955	186	17 730	174	8 968	88	5	10
426	CATOR	WS	I10	IFG	L	A08D	TS	80	34 504	R431,30	30 344	379	29 161	365	29 000	363	23 123	289	5	11
427	CATOR	RS	ALI	SNFL	L	B08D	CB	102	27 785	R272,40	23 625	232	22 461	220	21 967	215	15 742	154	6	11
428	CATOR	WS	S35	LCS	XL	A08D	TS	80	34 108	R426,35	30 072	376	28 894	361	28 733	359	22 168	277	7	11
429	VNSGN	BS	I17	IFG	XL	B04I	ZL	180	36 353	R201,96	33 254	185	31 145	173	31 005	172	25 427	141	5	11
430	VNSGN	WS	S35	LCS	XL	B04I	ZL	180	39 046	R216,92	35 935	200	33 909	188	33 731	187	27 002	150	6	11
431	TWKEL	BS	IF6	IFG	XL	B04I	ZL	180	35 006	R194,48	33 018	183	31 046	172	30 868	171	26 322	146	4	12
432	TWKEL	WS	I10	IFG	XL	B04I	ZL	180	36 353	R201,96	34 365	191	32 368	180	32 190	179	27 620	153	52	12
433	VNSGN	WS	I10	IFG	XL	B04I	ZL	180	39 307	R218,37	36 601	203	35 305	196	35 144	195	30 575	170	52	11
434	OMSOH	RG	RGB		L	B04I	ZL	180	21 078	R117,10	21 078	117	20 617	115	20 617	115	19 829	110	7	11
435	AEJEA	RS	CSS		L	B04I	ZL	180	24 478	R135,99	24 478	136	23 943	133	23 943	133	23 080	128	52	10
436	RULED	BS	ATR		XL	B04I	ZL	180	27 334	R151,86	27 334	152	26 195	146	26 035	145	24 328	135	7	12
437	RULED	WS	S35	LCS	XL	B04I	ZL	180	36 717	R203,99	36 717	204	35 408	197	35 247	196	32 362	180	7	12
438	GBLGP	RS	ALI	SNFL	L	A05D	HS	115	22 483	R195,50	18 388	160	17 311	151	16 817	146	10 795	94	8	10
439	NLRTM	RS	SGE	LCS	L	B04I	PC	180	19 207	R106,71	16 732	93	15 685	87	15 191	84	9 759	54	7	11
440	ILASH	RS	CSS		L	A05D	PL	115	31 565	R274,48	26 218	228	20 539	179	20 399	177	9 002	78	6	14

Table 3.24: Export data set 6

Shipment invoice no.	Arrival Point	Variety Group Code	Variety Code	Variety Licensor Code	Size Code	Outer Pack Code	Inner Pack Code	Quantity	Net Trade Amount (LCY)	Net Trade Price (LCY)	FOB	FOB (4,5kg)	DIP	DIP (4,5kg)	Ex-works	Ex-works (4,5kg)	PIB	PIB (4,5kg)	Harvest Week	Actual Arrival Week
441	ILASH	RS	TAW	CORE	L	A05D	PL	115	30 496	R265,18	25 148	219	19 746	172	19 567	170	6 739	59	52	14
442	ILASH	BS	ATR		L	A05D	PL	115	30 496	R265,18	25 148	219	19 746	172	19 585	170	8 318	72	5	14
443	NLRTM	RS	SGE	LCS	L	A05D	PU	115	16 395	R142,57	13 920	121	12 924	112	12 430	108	7 393	64	7	11
444	NLRTM	RS	ALI	SNFL	L	A05D	PU	115	17 281	R150,27	14 806	129	13 793	120	13 299	116	8 962	78	7	11
445	VNSGN	BS	I17	IFG	XL	B04I	ZL	180	35 662	R198,12	32 526	181	30 551	170	30 373	169	24 678	137	6	13
446	VNSGN	WS	S35	LCS	XXL	B04I	ZL	180	42 520	R236,22	39 384	219	37 285	207	37 106	206	30 278	168	7	13
447	SGSIN	WS	S35	LCS	XXL	B04I	ZL	180	42 520	R236,22	41 072	228	39 683	220	39 522	220	35 110	195	7	11
448	SGSIN	RG	RGB		XL	B04I	ZL	180	30 175	R167,64	28 727	160	27 563	153	27 403	152	24 223	135	7	11
449	SGSIN	BS	S34	LCS	XL	B04I	ZL	180	35 662	R198,12	34 214	190	32 950	183	32 789	182	28 502	158	7	11
450	MYPKG	WS	S35	LCS	XL	B04I	ZL	180	39 776	R220,98	38 329	213	36 990	205	36 829	205	32 467	180	6	12
451	MYPKG	BS	IF6	IFG	XL	B04I	ZL	180	17 831	R99,06	16 383	91	15 444	86	15 283	85	12 328	68	52	12
452	MYPKG	BS	I17	IFG	XL	B04I	ZL	180	31 547	R175,26	30 099	167	28 910	161	28 749	160	25 545	142	6	12
453	MYPKG	RG	RGB		XL	B04I	ZL	180	16 459	R91,44	15 011	83	14 097	78	13 936	77	11 006	61	7	12
454	MYPKG	BS	I17	IFG	XL	A05D	PL	120	23 774	R198,12	22 396	187	21 347	178	21 186	177	18 236	152	52	12
455	AEJEA	RS	CSS		L	B04I	ZL	180	21 946	R121,92	21 946	122	21 465	119	21 465	119	20 658	115	52	11
456	QADOH	RG	RGB		XL	B04I	ZL	180	20 129	R111,83	20 129	112	19 688	109	19 688	109	18 920	105	8	14
457	QADOH	BS	ATR		L	B04I	SZ	180	20 129	R111,83	20 129	112	19 688	109	19 688	109	18 920	105	8	14
458	GBLGP	RS	CSS		L	A05D	HS	120	24 180	R201,50	21 212	177	20 083	167	19 613	163	14 686	122	8	11
459	USNYC	BS	I17	IFG	XL	B08D	ZL	102	26 270	R257,55	21 718	213	19 808	194	19 668	193	12 836	126	52	12
460	USNYC	RS	I75	IFG	XL	A08D	PL	80	28 003	R350,04	23 451	293	21 509	269	21 369	267	14 505	181	52	12
461	CNSHA	RS	CSS		L	B04I	ZL	180	25 288	R140,49	22 310	124	20 390	113	19 173	107	12 828	71	8	13
462	CNSHA	BS	ATR		XL	B04I	ZL	170	23 883	R140,49	20 905	123	19 142	113	17 926	105	11 572	68	8	13
463	OMSLL	RG	RGB		L	B04I	ZL	180	22 306	R123,92	22 306	124	21 817	121	21 817	121	21 002	117	8	13
464	AEJEA	RG	RGB		L	B04I	ZL	180	25 094	R139,41	22 828	127	21 771	121	21 610	120	17 720	98	9	12
465	AEJEA	RS	CSS		L	B04I	ZL	180	25 094	R139,41	22 828	127	21 669	120	21 529	120	17 734	99	8	12
466	AEJEA	BS	ATR		L	B04I	SZ	180	25 094	R139,41	22 828	127	21 771	121	21 610	120	17 720	98	8	12
467	AEJEA	RG	RGB		XL	B04I	ZL	180	20 493	R113,85	20 493	114	20 045	111	20 045	111	19 269	107	8	12
468	AEJEA	RS	CSS		L	B04I	ZL	180	20 493	R113,85	20 493	114	20 045	111	20 045	111	19 445	108	7	12
469	ILASH	BS	ATR		L	A05D	PL	115	31 263	R271,85	25 683	223	20 181	175	20 021	174	8 423	73	52	15
470	ILASH	RS	CSS		L	A05D	PL	115	31 263	R271,85	25 683	223	20 049	174	19 586	170	7 678	67	7	15
471	NLRTM	RS	SGE	LCS	L	A05D	PU	120	20 735	R172,79	18 231	152	17 258	144	17 097	142	12 351	103	8	12
472	NLRTM	RS	ALI	SNFL	L	A05D	PU	115	19 870	R172,78	17 365	151	16 306	142	15 870	138	11 515	100	8	12
473	NLRTM	RS	SGE	LCS	L	A05D	UL	115	16 327	R141,98	13 942	121	12 809	111	11 656	101	5 913	51	7	12
474	NLRTM	RS	CSS		L	A05D	PU	120	14 192	R118,27	11 688	97	10 732	89	10 592	88	6 761	56	7	12
475	NLRTM	BS	IF6	IFG	L	A05D	CS	120	10 048	R83,73	7 543	63	6 765	56	6 604	55	2 799	23	7	12
476	NLRTM	BS	ATR		L	A05D	CS	120	22 313	R185,94	19 808	165	18 807	157	18 646	155	14 618	122	7	12
477	NLRTM	BS	S34	LCS	L	A05D	HS	120	25 905	R215,88	23 520	196	22 451	187	22 290	186	17 567	146	7	12
478	NLRTM	BS	IF6	IFG	L	A05D	PU	120	5 932	R49,44	3 428	29	2 622	22	2 482	21	-1 198	-10	7	12
479	NLRTM	BS	ATR		L	A05D	PL	115	13 804	R120,03	11 299	98	10 452	91	10 291	89	6 424	56	5	12
480	VNHPH	BS	I17	IFG	XL	B04I	ZL	180	21 114	R117,30	21 114	117	19 930	111	19 930	111	18 419	102	6	12
481	VNHPH	BS	S34	LCS	XL	B04I	ZL	180	21 114	R117,30	21 114	117	19 930	111	19 930	111	18 419	102	7	12
482	RULED	BS	I17	IFG	XL	B04I	ZL	180	30 670	R170,39	30 670	170	29 471	164	29 310	163	27 543	153	6	14
483	RULED	BS	S34	LCS	XL	B04I	ZL	170	27 650	R162,65	27 650	163	26 505	156	26 344	155	23 690	139	7	14
484	CATOR	RS	SGE	LCS	L	A08D	TS	80	35 372	R442,15	30 945	387	29 741	372	29 580	370	22 599	282	8	13
485	HKHKG	RS	CSS		L	B04I	ZL	180	34 871	R193,73	32 377	180	30 273	168	29 057	161	23 012	128	8	13
486	NLRTM	BS	ATR		L	A05D	UL	120	15 440	R128,66	12 053	100	11 192	93	11 031	92	6 262	52	9	12
487	ILASH	RS	CSS		L	A05D	PL	115	30 985	R269,43	25 291	220	19 478	169	19 338	168	7 461	65	8	16
488	ILASH	RS	CSS		L	A05D	ZL	115	30 985	R269,43	25 291	220	19 478	169	19 338	168	7 461	65	8	16
489	ILASH	RS	SGE	LCS	L	A05D	PL	115	30 985	R269,43	25 291	220	19 610	171	19 449	169	6 842	59	8	16
490	ILASH	BS	ATR		L	A05D	PL	115	30 985	R269,43	25 330	220	19 648	171	19 488	169	7 634	66	7	16
491	CATOR	RS	SGE	LCS	L	A08D	TS	80	35 106	R438,82	30 526	382	29 329	367	29 169	365	22 042	276	9	15
492	VNSGN	BS	S34	LCS	XL	B04I	ZL	170	30 967	R182,16	27 259	160	25 381	149	25 202	148	18 089	106	8	15
493	OMSOH	RG	RGB		L	B04I	ZL	180	21 415	R118,97	21 415	119	20 946	116	20 946	116	20 150	112	9	13
494	OMSOH	RG	RGB		L	B04I	SZ	180	21 415	R118,97	21 415	119	20 946	116	20 946	116	20 150	112	9	13
495	GBLGP	RS	CSS		L	A05P	HS	120	24 300	R202,50	21 078	158	20 054	150	19 952	150	15 373	115	52	14
496	GBLGP	BS	S34	LCS	L	A05D	HS	120	24 300	R202,50	21 078	176	20 054	167	19 893	166	14 378	120	8	14
497	NLRTM	RS	SGE	LCS	L	A05D	UL	115	21 798	R189,55	18 488	161	17 408	151	16 972	148	11 075	96	10	14
498	CATOR	RS	SGE	LCS	L	A08D	HS	80	36 378	R454,73	31 451	393	30 238	378	30 077	376	22 586	282	10	15
499	ILASH	RS	CSS		L	A05D	PL	115	23 965	R208,39	17 705	154	15 868	138	15 728	137	7 261	63	10	18
500	ILASH	RS	SGE	LCS	L	A05D	PL	115	33 726	R293,27	27 430	239	21 371	186	21 210	184	7 624	66	10	18
501	NLRTM	RS	SGE	LCS	L	A05D	UL	120	24 466	R203,89	20 529	171	19 514	163	19 325	161	13 075	109	10	15
502	MYPKG	BS	S34	LCS	XL	B04I	ZL	170	32 949	R193,82	31 117	183	29 909	176	29 748	175	25 198	148	9	15
503	MYPKG	BS	S34	LCS	XL	A05D	PL	120	24 316	R202,63	22 483	187	21 432	179	21 272	177	17 120	143	9	15
504	MYPKG	RS	CSS		L	A05P	CS	120	22 201	R185,01	20 368	153	19 357	145	19 255	144	16 078	121	52	15
505	CNSHA	RS	CSS		L	B04I	ZL	180	25 373	R140,96	22 054	123	20 138	112	19 674	109	13 745	76	10	17
506	NLRTM	RS	CSS		L	A05D	PU	120	22 391	R210,63	18 278	152	17 181	143	16 774	140	10 927	91	52	17
507	ILASH	RS	SGE	LCS	L	A05D	PL	115	35 267	R306,67	28 754	250	22 472	195	22 224	193	8 100	70	11	20
508	ILASH	RS	CSS		L	A05D	PL	115	35 267	R306,67	28 754	250	22 340	194	22 200	193	8 891	77	11	20

7.3 Annexure C: Variety labour hours and chemical cost for each variety

Table 4.25: Breakdown of TMRs into TOs for THS, RGB, TAW, PSE, and ATR

THS	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	50% full flower	80% full flower	After fruit set	50% of berries 4-5mm	75% of berries 4-5mm	100% of berries 4-5mm	Berry size 6-7mm	Berry size 8-10mm	Harvest
Tos													
TO 1	HP008	HM00B	HO00S	HZ00T	TG010	TG010	HX5/4	TG010	TC002	TG010	HS005	HL00L	*
TO 2		HM00D	HM00S	HR00P	TE0BU	TE0BU		HI00G	TG010	TE0BU	HT006	HL00S	
TO 3		HM00W		HR00W				TE0BU			HZ00B		
T0 4				TG010							HL00T		
TO 5													
TO 6													
RGB	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	After fruit set	Berry size 7-8mm	Berry size 12-15mm	10% véraison	Harvest	-	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HA0LL	HZ00B	HL00T	HG020	HL00F	*				
TO 2			HO00S	HX1/C	HT006								
TO 3				HR00A	HL00C								
T0 4				HR00W	HS008								
TO 5				HR002	HA0LL								
TO 6													
TAW	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-7mm	Berry size 8-10mm	5% véraison	Harvest	-	-	-
Tos													
TO 7	HP008	HM00W	HO00T	HX1/C	TG001	HA0LL	HT6,5	HL00L	HV040	*			
TO 8		HM00D	HO00S	HR00P		HS008	TG010						
TO 9		HM00B	HM00S	HR00W		HZ00B	HL00T						
T0 6				HR00A									
TO 9													
TO 10													
PSE	Winter dormacy	2-3 Leaf stage	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	Beginning of fruit set	2nd application (2 days later)	Berry size 6-7mm	Berry size 9-10mm	Berry size 12-15mm	Harvest	-	-
Tos													
TO 1	HP008	TE0BU	HM00D	HO00S	HL00T	TE0BU	TE0BU	HZ00B	HG005	HL00L	*	-	-
TO 2			HM00B	HM00S	HX1/C	TG1,5	TG1,5	HT006		HL00F			
TO 3			HM00P	HO00T	HR00B			HX1/C					
T0 4								HS008					
TO 5													
TO 6													
ATR	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	After fruit set	Berry size 9-10mm	Berry size 10-12mm	10% véraison	Harvest	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HR00R	HS00S	HL00T	TG002	HL00F	TV025	*			
TO 2			HO00S	HR00W		HS010	HZ00B						
TO 3				HR00A		HT006							
T0 4						HA0LL							
TO 5													
TO 6													

Table 4.26: Breakdown of TMRs into TOs for DBH, CSS, SGT, ALI, I10 and I75

DBH	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	After fruit set	Berry size 7-8mm	Berry size 12-15mm	Harvest	-	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HS00T	HI00G	HS008	HT006	HL00F	*				
TO 2			HO00S	HX1/C	HM00T	HA0LL	HZ00B						
TO 3			HM00P	HR00A			HL00T						
T0 4				HR00W									
TO 5				HR002									
TO 6				HS00S									
CSS	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	100% of berries 4-5mm	Berry size 9-10mm	5% véraison	10% véraison	Harvest	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HX1/C	HA0LL	HZ00B	HI00G	TE0BU	HA0LS	TV045	*		
TO 2			HO00S	HR00R	HS010	HL00C		HT006					
TO 3			HM00S	HR00W	HL00T	HA0LL		HG7,5					
T0 4				HR00A				HR00A					
TO 5								HL00T					
TO 6													
SGT	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	After fruit set	Berry size 7-8mm	10% véraison	Harvest	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HX1/C	HC002	HC002	HT006	TG005	HV030	*			
TO 2			HO00S	HR00R			HL00T		HA0LL				
TO 3			HM00S	HR00W			HA0LL						
T0 4				HR00A									
TO 5													
TO 6													
ALI	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-8mm	Harvest	-	-	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HR00W	TG001	HZ00B	TG002	*					
TO 2		HM00D	HO00S	HR00A	TE0BU	HL00C	HL00S						
TO 3			HM00P	TE0BU		HA0LL	HL00T						
T0 4							HL00L						
TO 5							HT005						
TO 6													
I10	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-8mm	Harvest	-	-	-	-	-	-
Tos													
TO 1	HP008	HO00T	HS00T	HT007	HA0LL	HG015	*						
TO 2		HO00S	HR00A			HC001							
TO 3			TE0BU										
T0 4													
TO 5													
TO 6													
I75	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 2-4mm	Berry size 6-8mm	Berry size 8-10mm	5% véraison	Harvest	-	-	-
	TO 1	HP008	HO00T	TE0BU	HG015	HA0LL	HG015	HS00T	HT6,5	TV045	*		
	TO 2		HO00S										
	TO 3												
	T0 4												
	TO 5												
	TO 6												

Table 4.27: Breakdown of TMRs into TOs for S35, SGE, S34, I17, STL and RGT

S35	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	After fruit set	Berry Size 5-6mm	Berry size 7-8mm	Berry size 8-9mm	Harvest	-	-	-	-
	TO 1	HP008	HM00D	HO00S	HR00C	HS008	HL00T	HL00L	TG020	*			
	TO 2		HM00W	HM00S	HX1/C	HZ00B	HT006		HI00G				
	TO 3				HR00W	HA0LL	HL00L		TE0BU				
	T0 4								TC1,5				
	TO 5												
	TO 6												
SGE	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	Berry size 2-4mm	Berry size 6-8mm	5% véraison	10% véraison	Harvest	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HX1/C	TE0BU	TE0BU	TG002	TV040	TV040	*			
TO 2			HO00S	HR00R	TG002	TG002	HZ00B						
TO 3			HM00S	HR00W			HS006						
T0 4				HR00A			HT005						
TO 5													
TO 6													
S34	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	After fruit set	Berry size 9-10mm	Berry size 10-12mm	Harvest	-	-	-
Tos													
TO 1	HP008	HM00U	HO00T	HA0LL	HS00T	TC001	HS008	HZ00B	HL00F	*			
TO 2			HO00S	HX1/C	HA0LL		HT006						
TO 3			HM00S	HR00R	HM00T		HL00T						
T0 4				HR00W			HA0LL						
TO 5				HR00A									
TO 6													
I17	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	Berry size 2-4mm	Berry Size 5-6mm	Berry size 8-9mm	Berry size 8-10mm	Berry size 9-12mm	5% véraison	Harvest	-	-
Tos													
TO 1	HP008	HO00T	TE0BU	TG001	HI00G	HT6,5	HL00L	HG010	HA1LB	HA2LB	*		
TO 2		HO00S						HC001					
TO 3													
T0 4													
TO 5													
TO 6													
STL	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	Beginning of fruit set	Berry size 6-7mm	Berry size 9-12mm	Berry size 12-15mm	After véraison	Harvest	-	-	-
Tos													
TO 1	HP008	HM00W	HO00T	HX1/C	TE0BU	HT006	HG015	HL00T	HV030	*			
TO 2		HM00D	HO00S	HR00P	TG1,5	HX1/C		HL00L					
TO 3		HM00B		HL00T		HZ00B		HL00F					
T0 4				HR00C		HS008							
TO 5				TE0BU									
TO 6				TFN20									
RGT	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	During flower	After fruit set	Berry Size 5-6mm	Berry size 8-10mm	Harvest	-	-	-	-	-
Tos													
TO 1	HP008	HM00D	HO00T	HS00T	HZ00B	HL00T	HL00L	*					
TO 2		HM00W	HO00S		HS008	HT006							
TO 3					HA0LL	HL00L							
T0 4													
TO 5													
TO 6													

Table 4.28: Labour hours allocated to TOs in TMR breakdown for THS, RGB, TAW, PSE and AT

THS	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	50% full flower	80% full flower	After fruit set	50% of berries 4-5mm	75% of berries 4-5mm	100% of berries 4-5mm	Berry size 6-7mm	Berry size 8-10mm	Harvest
Hours/ha	59	98	101	149	2	2	111	67	1	2	172	680	8
TO 1	59	98	101	89	1	1	111	1	1	1	67	680	8
TO 2		98	98	149	2	2		67	1	2	98	172	
TO 3		98		149				2			89		
T0 4				1							172		
TO 5													
TO 6													

RGB	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	After fruit set	Berry size 7-8mm	Berry size 12-15mm	10% véraison	Harvest	-	-	-	-
Hours/ha	59	98	101	149	172	172	34	172	8	-	-	-	-
TO 1	59	98	101	149	89	172	34	172	8	-	-	-	-
TO 2			101	111	98								
TO 3				149	172								
T0 4				149	67								
TO 5				149	149								
TO 6													

TAW	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-7mm	Berry size 8-10mm	5% véraison	Harvest	-	-	-
Hours/ha	59	98	101	149	1	149	172	680	34	8	-	-	-
TO 7	59	98	101	111	1	149	98	680	34	8	-	-	-
TO 8		98	101	149		67	1						
TO 9		98	98	149		89	172						
T0 6				149									
TO 9													
TO 10													

PSE	Winter dormacy	2-3 Leaf stage	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	Beginning of fruit set	2nd applicati on (2 days later)	Berry size 6-7mm	Berry size 9-10mm	Berry size 12-15mm	Harvest	-	-
Hours/ha	59	2	98	126	172	2	2	111	34	741	8	-	-
TO 1	59	2	98	101	172	2	2	89	34	741	8	-	-
TO 2			98	98	111	1	1	98		179			
TO 3			44	126	149			111					
T0 4								67					
TO 5													
TO 6													

ATR	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	After fruit set	Berry size 9-10mm	Berry size 10-12mm	10% véraison	Harvest	-	-	-
Hours/ha	59	98	101	149	67	172	89	172	1	8	-	-	-
TO 1	59	98	101	149	67	172	1	172	1	8	-	-	-
TO 2			101	149		67	89						
TO 3				149		98							
T0 4						149							
TO 5													
TO 6													

Table 4.29: Labour hours allocated to TOs in TMR breakdown for DBH, CSS, SGT, ALI, I10 and I75

DBH	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	After fruit set	Berry size 7-8mm	Berry size 12-15mm	Harvest	-	-	-	-
Hours/ha	59	98	101	149	98	149	172	172	8	-	-	-	-
TO 1	59	98	101	67	67	67	98	172	8	-	-	-	-
TO 2			101	111	98	149	89						
TO 3			44	149			172						
T0 4				149									
TO 5				149									
TO 6				67									
CSS	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	100% of berries 4-5mm	Berry size 9-10mm	5% véraison	10% véraison	Harvest	-	-
Hours/ha	59	98	139	149	178	178	67	172	149	1	8	-	-
TO 1	59	98	139	111	178	89	67	2	149	1	8	-	-
TO 2			101	149	67	172		98					
TO 3			98	149	172	178		34					
T0 4				111				111					
TO 5								172					
TO 6													
SGT	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	After fruit set	Berry size 7-8mm	10% véraison	Harvest	-	-	-
Hours/ha	59	98	101	149	34	34	172	1	149	8	-	-	-
TO 1	59	98	101	111	34	34	98	1	34	8	-	-	-
TO 2			101	149			172		149				
TO 3			98	149			149						
T0 4				149									
TO 5													
TO 6													
ALI	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-8mm	Harvest	-	-	-	-	-
Hours/ha	59	98	101	149	2	172	1 111	8	-	-	-	-	-
TO 1	59	98	63	149	1	89	1	8	-	-	-	-	-
TO 2		98	101	149	2	172	172						
TO 3			44	2		149	172						
T0 4							1 111						
TO 5							98						
TO 6													
I10	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-8mm	Harvest	-	-	-	-	-	-
Hours/ha	59	101	149	98	149	34	8	-	-	-	-	-	-
TO 1	59	101	67	98	149	34	8	-	-	-	-	-	-
TO 2		101	149			34							
TO 3			2										
T0 4													
TO 5													
TO 6													
I75	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 2-4mm	Berry size 6-8mm	Berry size 8-10mm	5% véraison	Harvest	-	-	-
Hours/ha	59	101	2	34	149	34	67	98	1	8	-	-	-
TO 1	59	101	2	34	149	34	67	98	1	8	-	-	-
TO 2		101											
TO 3													
T0 4													
TO 5													
TO 6													

Table 4.30: Labour hours allocated to TOs in TMR breakdown for S35, SGE, S34, I17, STL and RGT

S35	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	After fruit set	Berry Size 5-6mm	Berry size 7-8mm	Berry size 8-9mm	Harvest	-	-	-	-
Hours/ha	59	98	101	149	149	680	680	67	8	-	-	-	-
TO 1	59	98	101	149	67	172	680	1	8	-	-	-	-
TO 2		98	98	111	89	98		67					
TO 3				149	149	680		2					
T0 4								1					
TO 5													
TO 6													
SGE	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	Berry size 2-4mm	Berry size 6-8mm	5% véraison	10% véraison	Harvest	-	-	-
Hours/ha	59	98	101	149	2	2	98	1	1	8	-	-	-
TO 1	59	98	101	111	2	2	1	1	1	8	-	-	-
TO 2			101	149	1	1	89						
TO 3			98	149			67						
T0 4				149			98						
TO 5													
TO 6													
S34	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	After fruit set	Berry size 9-10mm	Berry size 10-12mm	Harvest	-	-	-
Hours/ha	59	98	101	149	149	1	172	89	172	8	-	-	-
TO 1	59	98	101	149	67	1	67	89	172	8	-	-	-
TO 2			101	111	149		98						
TO 3			98	149	98		172						
T0 4				149			149						
TO 5				149									
TO 6													
I17	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	Berry size 2-4mm	Berry Size 5-6mm	Berry size 8-9mm	Berry size 8-10mm	Berry size 9-12mm	5% véraison	Harvest	-	-
Hours/ha	59	101	2	1	67	98	680	34	90	74	8	-	-
TO 1	59	101	2	1	67	98	680	34	90	74	8	-	-
TO 2		101						34					
TO 3													
T0 4													
TO 5													
TO 6													
STL	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	Beginning of fruit set	Berry size 6-7mm	Berry size 9-12mm	Berry size 12-15mm	After véraison	Harvest	-	-	-
Hours/ha	59	98	101	172	2	111	34	477	34	8	-	-	-
TO 1	59	98	91	111	2	98	34	172	34	8	-	-	-
TO 2		98	101	149	1	111		477					
TO 3		98		172		89		101					
T0 4				149		67							
TO 5				2									
TO 6				2									
RGT	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	During flower	After fruit set	Berry Size 5-6mm	Berry size 8-10mm	Harvest	-	-	-	-	-
Hours/ha	59	98	101	67	149	680	680	8	-	-	-	-	-
TO 1	59	98	101	67	89	172	680	8	-	-	-	-	-
TO 2		98	101		67	98							
TO 3					149	680							
T0 4													
TO 5													
TO 6													

Table 4.31: Chemical hormone cost allocated to TOs in TMR breakdown for THS, RGB, TAW, PSE and ATR

THS	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	50% full flower	80% full flower	After fruit set	50% of berries 4-5mm	75% of berries 4-5mm	100% of berries 4-5mm	Berry size 6-7mm	Berry size 8-10mm	Harvest
Total	-	-	-	R586,80	R681,80	R681,80	-	R681,80	R1 427,80	R681,80	-	-	-
TO 1	-	-	-	-	R236,80	R236,80	-	R236,80	R841,00	R236,80	-	-	-
TO 2		-	-	-	R95,00	R95,00		-	R236,80	R95,00	-	-	
TO 3		-		-				R95,00			-		
T0 4				R236,80							-		
TO 5													
TO 6													

RGB	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	After fruit set	Berry size 7-8mm	Berry size 12-15mm	10% véraison	Harvest	-	-	-	-
Total	-	-	-	-	-	-	R823,60	-	-	-	-	-	-
TO 1	-	-	-	-	-	-	R473,60	-	-	-	-	-	-
TO 2			-	-	-								
TO 3				-	-								
T0 4				-	-								
TO 5				-	-								
TO 6													

TAW	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-7mm	Berry size 8-10mm	5% véraison	Harvest	-	-	-
Total	-	-	-	-	R373,68	-	R586,80	-	R1 230,00	-	-	-	-
TO 7	-	-	-	-	R23,68	-	-	-	R880,00	-	-	-	-
TO 8		-	-	-		-	R236,80						
TO 9		-	-	-		-	-						
T0 6				-									
TO 9													
TO 10													

PSE	Winter dormacy	2-3 Leaf stage	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	Beginning of fruit set	2nd application (2 days later)	Berry size 6-7mm	Berry size 9-10mm	Berry size 12-15mm	Harvest	-	-
Total	-	R445,00	-	-	-	R480,52	R480,52	-	R468,40	-	-	-	-
TO 1	-	R95,00	-	-	-	R95,00	R95,00	-	R118,40	-	-	-	-
TO 2			-	-	-	R35,52	R35,52	-		-			
TO 3			-	-	-			-					
T0 4								-					
TO 5													
TO 6													

ATR	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	After fruit set	Berry size 9-10mm	Berry size 10-12mm	10% véraison	Harvest	-	-	-
Total	-	-	-	-	-	-	R397,36	-	R900,00	-	-	-	-
TO 1	-	-	-	-	-	-	R47,36	-	R550,00	-	-	-	-
TO 2			-	-		-	-						
TO 3				-		-							
T0 4						-							
TO 5													
TO 6													

Table 4.32: Chemical hormone cost allocated to TOs in TMR breakdown for DBH, CSS, SGT, ALI, I10 and I75

DBH	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	After fruit set	Berry size 7-8mm	Berry size 12-15mm	Harvest	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-
TO 1	-	-	-	-	-	-	-	-	-	-	-	-	-
TO 2			-	-	-	-	-						
TO 3			-	-			-						
T0 4				-									
TO 5				-									
TO 6				-									
CSS	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	100% of berries 4-5mm	Berry size 9-10mm	5% véraison	10% véraison	Harvest	-	-
Total	-	-	-	-	-	-	-	R622,60	-	R1 340,00	-	-	-
TO 1	-	-	-	-	-	-	-	R95,00	-	R990,00	-	-	-
TO 2			-	-	-	-		-					
TO 3			-	-	-	-		R177,60					
T0 4				-				-					
TO 5								-					
TO 6													
SGT	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	After fruit set	Berry size 7-8mm	10% véraison	Harvest	-	-	-
Total	-	-	-	-	R1 191,00	R1 191,00	-	R468,40	R1 010,00	-	-	-	-
TO 1	-	-	-	-	R841,00	R841,00	-	R118,40	R660,00	-	-	-	-
TO 2			-	-			-		-				
TO 3			-	-			-						
T0 4				-									
TO 5													
TO 6													
ALI	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-8mm	Harvest	-	-	-	-	-
Total	-	-	-	R445,00	R468,68	-	R397,36	-	-	-	-	-	-
TO 1	-	-	-	-	R23,68	-	R47,36	-	-	-	-	-	-
TO 2		-	-	-	R95,00	-	-						
TO 3			-	R95,00		-	-						
T0 4							-						
TO 5							-						
TO 6													
I10	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 6-8mm	Harvest	-	-	-	-	-	-
Total	-	-	R445,00	-	-	R1 125,70	-	-	-	-	-	-	-
TO 1	-	-	-	-	-	R355,20	-	-	-	-	-	-	-
TO 2		-	-			R420,50							
TO 3			R95,00										
T0 4													
TO 5													
TO 6													
I75	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	After fruit set	Berry size 2-4mm	Berry size 6-8mm	Berry size 8-10mm	5% véraison	Harvest	-	-	-
Total	-	-	R445,00	R705,20	-	R705,20	-	-	R1 340,00	-	-	-	-
TO 1	-	-	R95,00	R355,20	-	R355,20	-	-	R990,00	-	-	-	-
TO 2		-											
TO 3													
T0 4													
TO 5													
TO 6													

Table 4.33: Chemical hormone cost allocated to TOs in TMR breakdown for S35, SGE, S34, I17, STL and RGT

S35	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	After fruit set	Berry Size 5-6mm	Berry size 7-8mm	Berry size 8-9mm	Harvest	-	-	-	-
Total	-	-	-	-	-	-	-	R1 549,35	-	-	-	-	-
TO 1	-	-	-	-	-	-	-	R473,60	-	-	-	-	-
TO 2		-	-	-	-	-		-					
TO 3				-	-	-		R95,00					
T0 4								R630,75					
TO 5													
TO 6													

SGE	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	Berry size 2-4mm	Berry size 6-8mm	5% véraison	10% véraison	Harvest	-	-	-
Total	-	-	-	-	R492,36	R492,36	R397,36	R1 230,00	R1 230,00	-	-	-	-
TO 1	-	-	-	-	R95,00	R95,00	R47,36	R880,00	R880,00	-	-	-	-
TO 2			-	-	R47,36	R47,36	-						
TO 3			-	-			-						
T0 4				-			-						
TO 5													
TO 6													

S34	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	After fruit set	Berry size 9-10mm	Berry size 10-12mm	Harvest	-	-	-
Total	-	-	-	-	-	R770,50	-	-	-	-	-	-	-
TO 1	-	-	-	-	-	R420,50	-	-	-	-	-	-	-
TO 2			-	-	-		-						
TO 3			-	-	-		-						
T0 4				-			-						
TO 5				-									
TO 6													

I17	Winter dormacy	Shoot length 60-80cm	Before flower	110% flower (Start of fruit set)	Berry size 2-4mm	Berry Size 5-6mm	Berry size 8-9mm	Berry size 8-10mm	Berry size 9-12mm	5% véraison	Harvest	-	-
Total	-	-	R445,00	R373,68	-	-	-	R1 007,30	-	-	-	-	-
TO 1	-	-	R95,00	R23,68	-	-	-	R236,80	-	-	-	-	-
TO 2		-						R420,50					
TO 3													
T0 4													
TO 5													
TO 6													

STL	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	Beginning of fruit set	Berry size 6-7mm	Berry size 9-12mm	Berry size 12-15mm	After véraison	Harvest	-	-	-
Total	-	-	-	R2 845,00	R480,52	-	R705,20	-	R1 010,00	-	-	-	-
TO 1	-	-	-	-	R95,00	-	R355,20	-	R660,00	-	-	-	-
TO 2		-	-	-	R35,52	-		-					
TO 3		-		-		-		-					
T0 4				-		-							
TO 5				R95,00									
TO 6				R2 400,00									

RGT	Winter dormacy	Shoot length 20-30cm	Shoot length 60-80cm	During flower	After fruit set	Berry Size 5-6mm	Berry size 8-10mm	Harvest	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-
TO 1	-	-	-	-	-	-	-	-	-	-	-	-	-
TO 2		-	-		-	-							
TO 3					-	-							
T0 4													
TO 5													
TO 6													

7.4 Annexure: D The TMRs graphically expressed in a timeline with the associated labour hour and chemical cost

Figure 17: The TMR for RGB from week 28 to 4

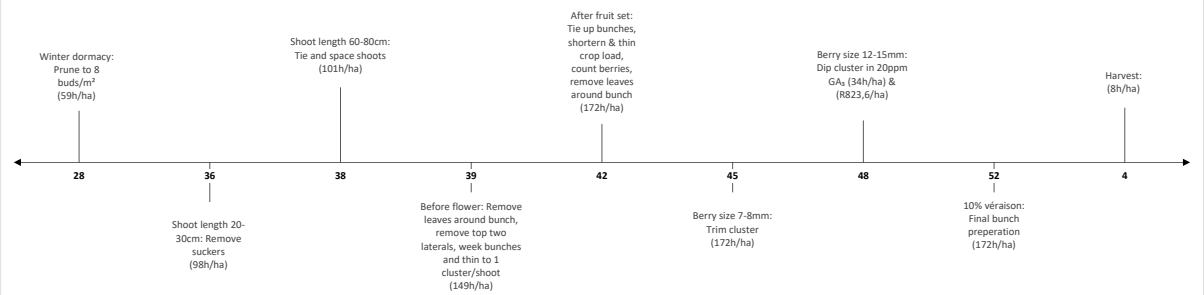


Figure 18: The TMR for TAW from week 27 to 52

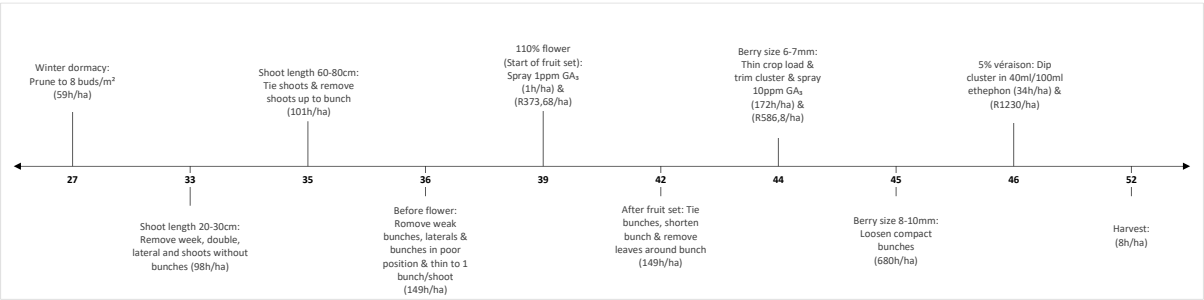


Figure 19: The TMR for PSE from week 25 to 52

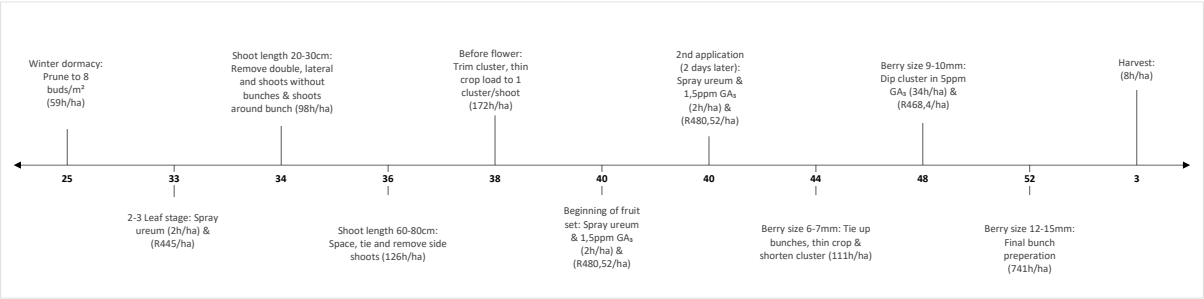


Figure 20: The TMR for ATR from week 28 to 52

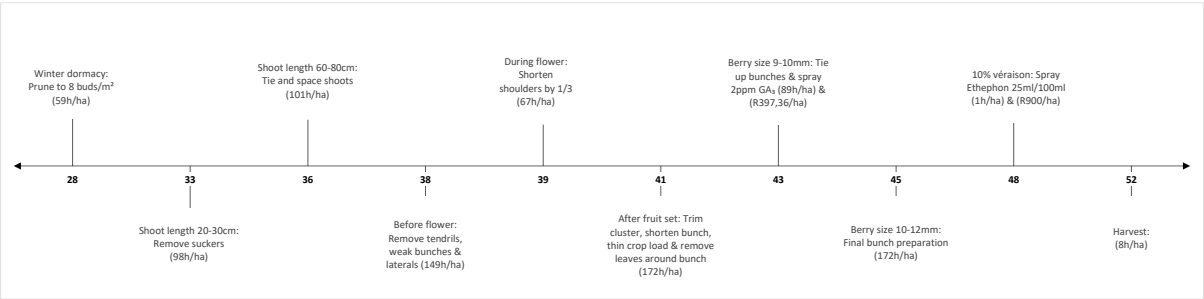


Figure 21: The TMR for DBH from week 25 to52

Figure 22: The TMR for CSS from week 28 to 42

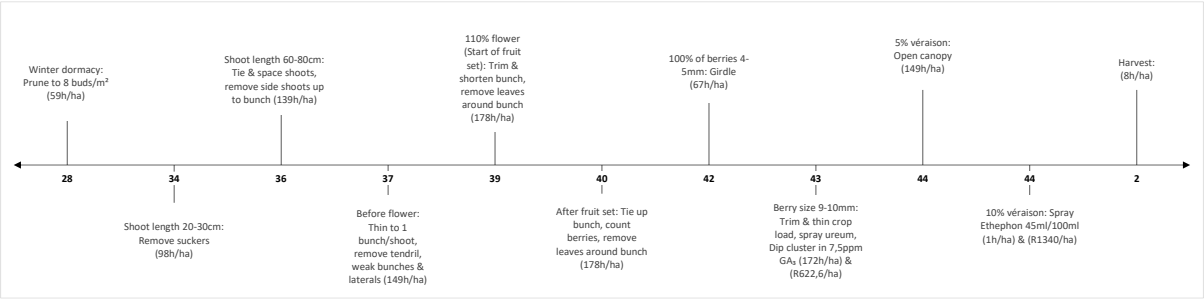


Figure 23: The TMR for SGT from week 29 to 51

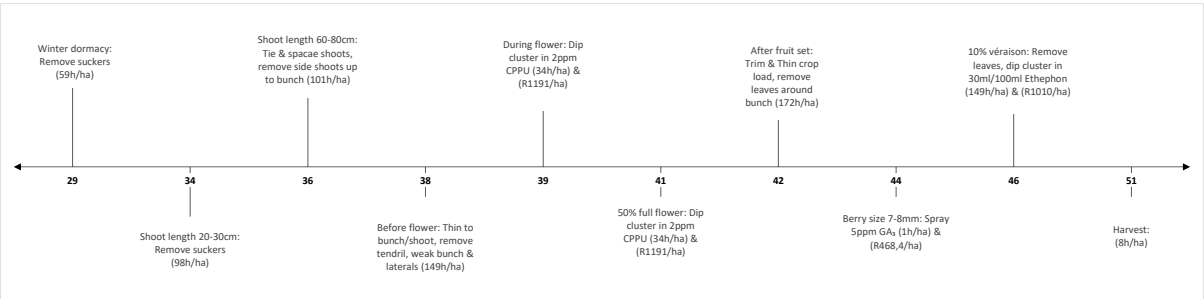


Figure 24: The TMR for ALI from week 28 to 3

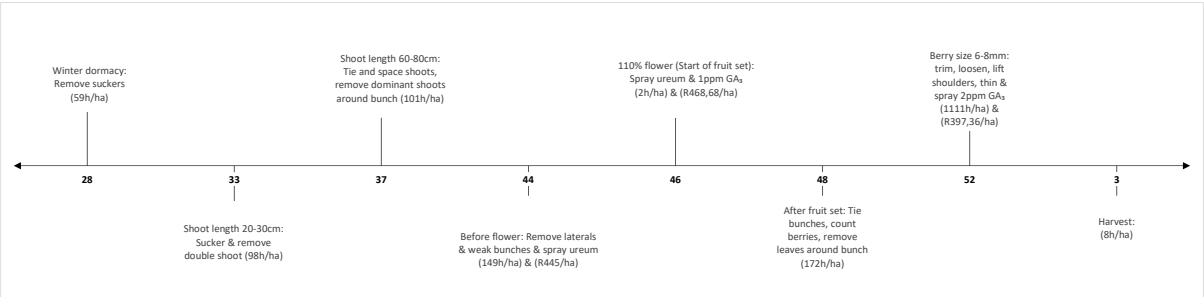


Figure 25: The TMR for I10 from week 25 to 3

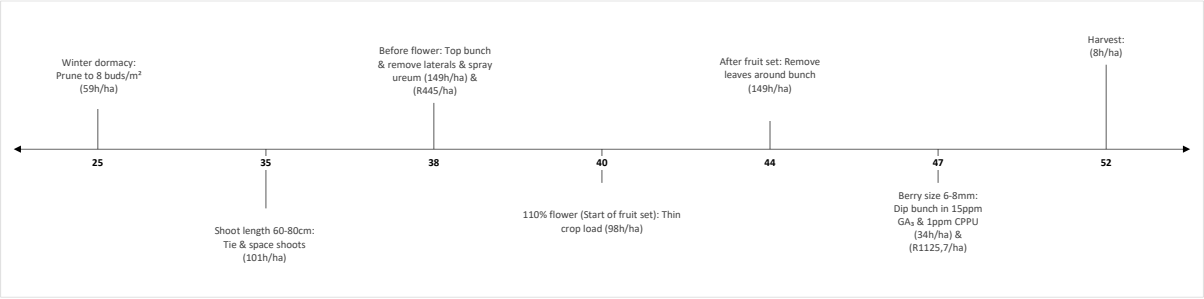


Figure 26: The TMR for I75 from week 28 to 51

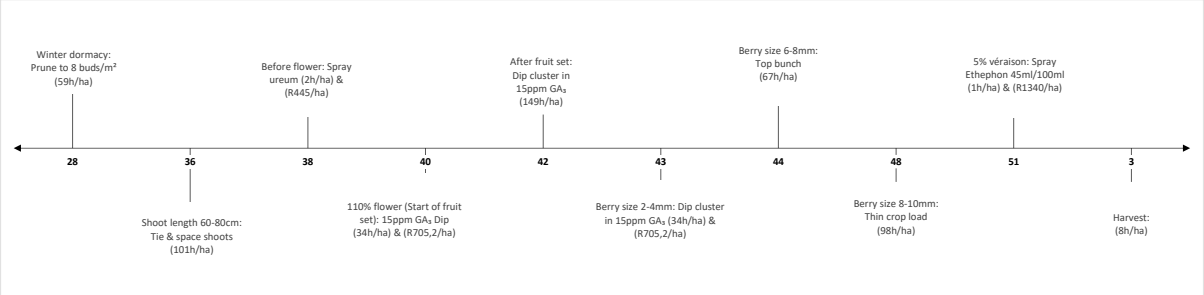


Figure 27: The TMR for S35 from week 23 to 3

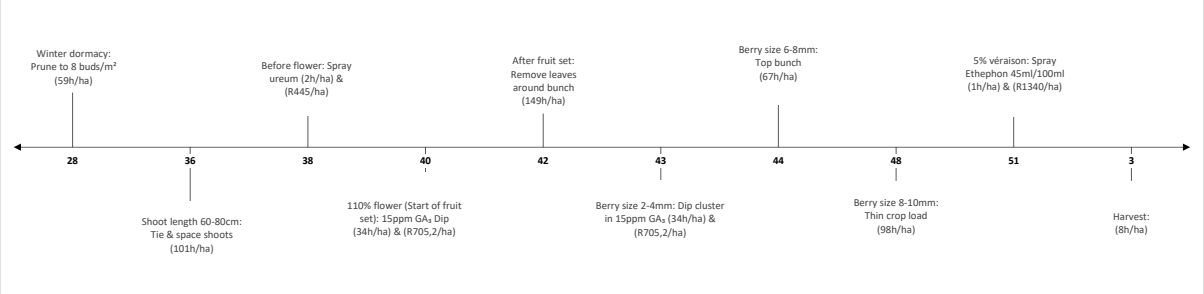


Figure 28: The TMR for SGE from week 28 to 5

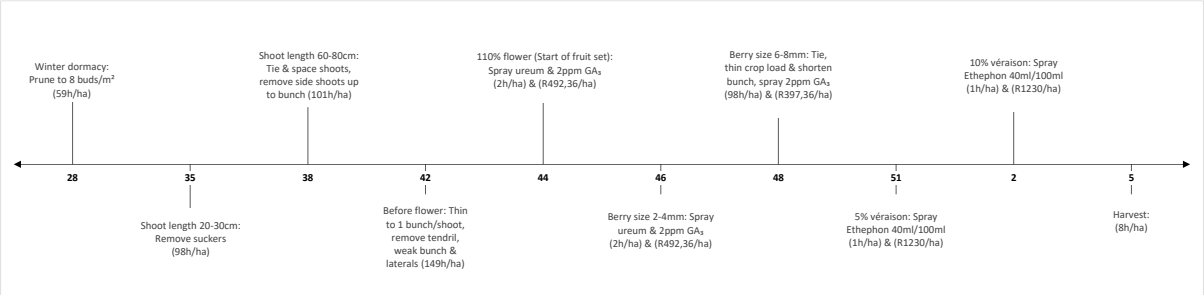


Figure 29: The TMR for S34 from week 28 to 6

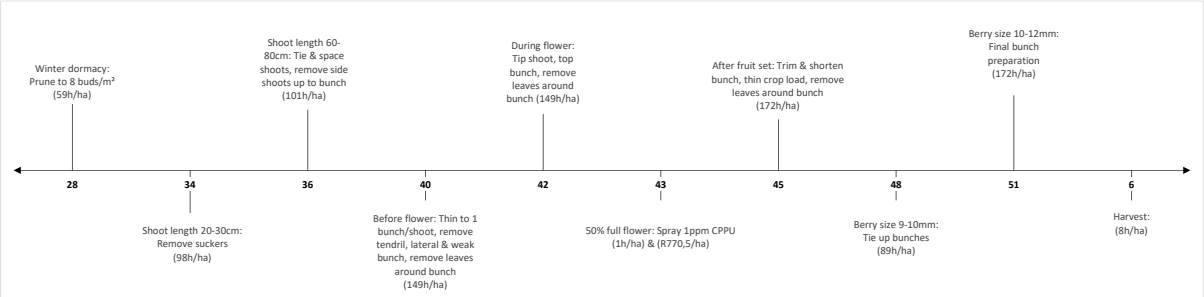


Figure 30: The TMR for I17 from week 23 to 1

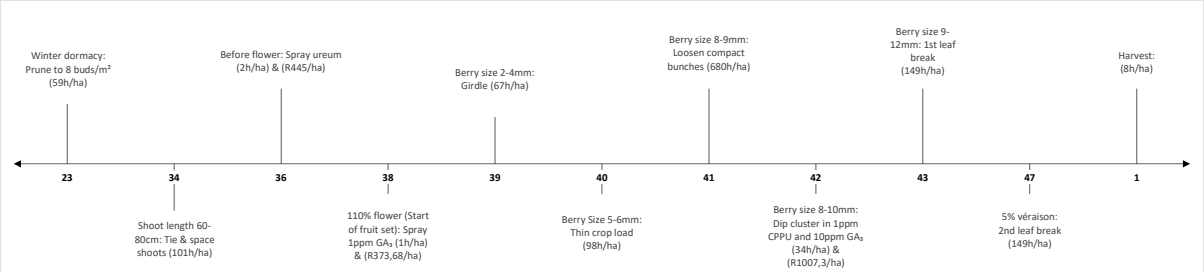


Figure 31: The TMR for STL from week 25 to 5

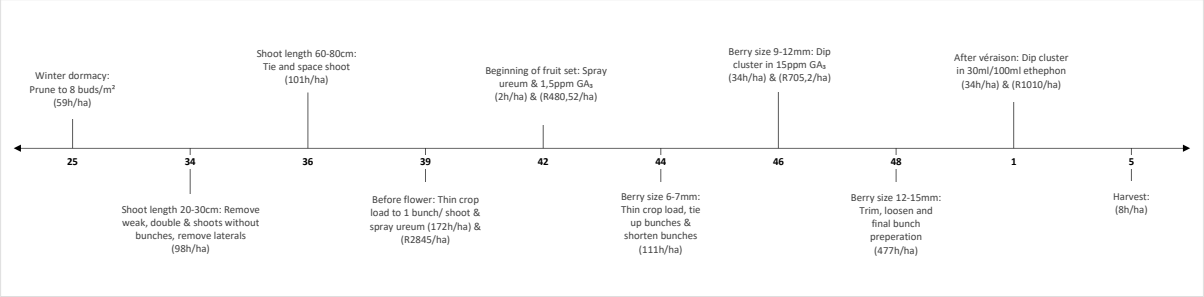


Figure 32: The TMR for RGT from week 25 to 5

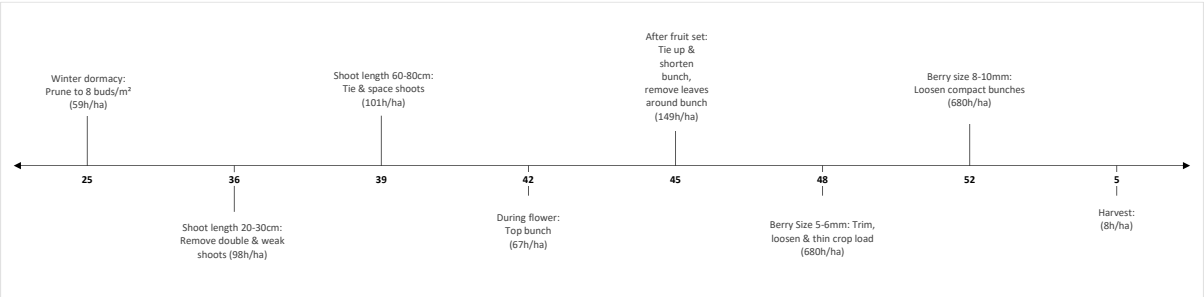


Table 4.34: The amount of labour hours and chemical cost required at the various phenological stages for each variety

Shoot growth					Flower				Fruit set				Berry growth														Véraison		
Variety	Winter dormacy	2-3 Leaf stage	Shoot length 20-30cm	Shoot length 60-80cm	Before flower	During flower	50% full flower	80% full flower	Beginning of fruit set	2nd application (2 days later)	110% flower (Start of fruit set)	After fruit set	Berry size 2-4mm	50% of berries 4-5mm	75% of berries 4-5mm	100% of berries 4-5mm	Berry Size 5-6mm	Berry size 6-7mm	Berry size 6-8mm	Berry size 7-8mm	Berry size 8-9mm	Berry size 9-12mm	Berry size 8-10mm	Berry size 9-10mm	Berry size 10-12mm	Berry size 12-15mm	5% véraison	10% véraison	After véraison
THS	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha) & (R586,8/ha)		(2h/ha) & (R681,8/ha)	(2h/ha) & (R681,8/ha)				(111h/ha)		(67h/ha) & (R681,8/ha)	(1h/ha) & (R1427,8/ha)	(2h/ha) & (R681,8/ha)		(172h/ha)					(680h/ha)						
RGB	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)							(172h/ha)								(172h/ha)						(34h/ha) & (R823,6/ha)		(172h/ha)	
TAW	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)						(1h/ha) & (R373,68/ha)	(149h/ha)						(172h/ha) & (R586,8/ha)					(680h/ha)				(34h/ha) & (R1230/ha)		
PSE	(59h/ha)	(2h/ha) & (R445/ha)	(98h/ha)	(126h/ha)	(172h/ha)						(2h/ha) & (R480,52/ha)	(2h/ha) & (R480,52/ha)						(111h/ha)						(34h/ha) & (R468,4/ha)		(741h/ha)			
ATR	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)	(67h/ha)						(172h/ha)												(89h/ha) & (R397,36/ha)	(172h/ha)			(1h/ha) & (R900/ha)	
DBH	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)	(98h/ha)						(149h/ha)								(172h/ha)						(172h/ha)			
CSS	(59h/ha)		(98h/ha)	(139h/ha)	(149h/ha)						(178h/ha)	(178h/ha)				(67h/ha)								(172h/ha) & (R622,6/ha)			(149h/ha)	(1h/ha) & (R1340/ha)	
SGT	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)	(34h/ha) & (R1191/ha)	(34h/ha) & (R1191/ha)					(172h/ha)								(1h/ha) & (R468,4/ha)								(149h/ha) & (R1010/ha)	
ALI	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha) & (R445/ha)						(2h/ha) & (R468,68/ha)	(172h/ha)							(1111h/ha) & (R397,36/ha)										
I10	(59h/ha)			(101h/ha)	(149h/ha) & (R445/ha)						(98h/ha)	(149h/ha)							(34h/ha) & (R1125,7/ha)										
I75	(59h/ha)			(101h/ha)	(2h/ha) & (R445/ha)						(34h/ha) & (R705,2/ha)	(149h/ha)	(34h/ha) & (R705,2/ha)						(67h/ha)				(98h/ha)				(1h/ha) & (R1340/ha)		
S35	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)							(149h/ha)					(680h/ha)			(680h/ha)	(67h/ha) & (R1549,35/ha)								
SGE	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)						(2h/ha) & (R492,36/ha)		(2h/ha) & (R492,36/ha)						(98h/ha) & (R397,36/ha)								(1h/ha) & (R1230/ha)	(1h/ha) & (R1230/ha)	
S34	(59h/ha)		(98h/ha)	(101h/ha)	(149h/ha)	(149h/ha)	(1h/ha) & (R770,5/ha)					(172h/ha)												(89h/ha)	(172h/ha)				
I17	(59h/ha)			(101h/ha)	(2h/ha) & (R445/ha)						(1h/ha) & (R373,68/ha)		(67h/ha)				(98h/ha)				(680h/ha)	(149h/ha)	(34h/ha) & (R1007,3/ha)				(149h/ha)		
STL	(59h/ha)		(98h/ha)	(101h/ha)	(172h/ha) & (R2845/ha)				(2h/ha) & (R480,52/ha)									(111h/ha)				(34h/ha) & (R705,2/ha)				(477h/ha)			(34h/ha) & (R1010/ha)
RGT	(59h/ha)		(98h/ha)	(101h/ha)		(67h/ha)						(149h/ha)					(680h/ha)						(680h/ha)						

7.5 Annexure E: Simulation of Farm A from 2020 to 2034

Table 4.35: Table grape variety portfolio for Farm A

Table grape variety portfolio for farm A																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	THS	THS	THS	THS	THS	THS	THS	I75	I75	I75	I75	I75	I75	I75	I75
2	1	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	PSE	PSE	PSE	PSE	PSE	PSE	PSE
3	1	TAW	TAW	TAW	TAW	TAW	TAW	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
4	1	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	ATR	ATR	ATR	ATR	ATR	ATR
5	1	THS	THS	THS	THS	THS	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT
6	1	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	I10	I10	I10	I10	I10
7	1	RGT	RGT	RGT	RGT	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH
8	1	CSS	CSS	CSS	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE
9	1	ATR	ATR	ATR	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10
10	1	THS	THS	THS	THS	THS	STL	STL	STL	STL	STL	STL	STL	STL	STL	STL
11	1	RGB	RGB	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS
12	1	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	S35	S35	S35	S35	S35	S35	S35
13	1	ATR	ATR	ATR	ATR	ATR	ATR	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE
14	1	THS	THS	THS	THS	THS	THS	THS	THS	THS	I17	I17	I17	I17	I17	I17
15	1	DBH	DBH	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT
16	1	PSE	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS
17	1	SGT	SGT	SGT	SGT	SGT	SGT	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
18	1	RGT	RGT	RGT	RGT	RGT	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW
19	1	STL	STL	STL	STL	STL	STL	STL	STL	I10	I10	I10	I10	I10	I10	I10
20	1	DBH	DBH	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34

Table 4.36: Yield percentage based on vine age for Farm A

Yield percentage based on vine age for farm A																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	100%	100%	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%
2	1	75%	75%	66%	66%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%
3	1	100%	100%	100%	100%	100%	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%
4	1	100%	75%	75%	75%	66%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%
5	1	75%	75%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%
6	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	0%	0%	30%	70%	100%
7	1	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%
8	1	75%	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%
9	1	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%
10	1	100%	100%	100%	75%	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%
11	1	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%
12	1	100%	75%	75%	75%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%
13	1	30%	70%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%
14	1	66%	66%	66%	66%	66%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%
15	1	100%	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%
16	1	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
17	1	100%	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%
18	1	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%
19	1	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%
20	1	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4.37: Actual yield percentage of mathematical yield potential for Farm A

Actual yield percentage of mathematical potential for farm A																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	38%	38%	38%	38%	38%	38%	38%	59%	59%	59%	59%	59%	59%	59%	59%
2	1	33%	33%	33%	33%	33%	33%	33%	33%	56%	56%	56%	56%	56%	56%	56%
3	1	65%	65%	65%	65%	65%	65%	64%	64%	64%	64%	64%	64%	64%	64%	64%
4	1	56%	56%	56%	56%	56%	56%	56%	56%	56%	36%	36%	36%	36%	36%	36%
5	1	38%	38%	38%	38%	38%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
6	1	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	55%	55%	55%	55%	55%
7	1	68%	68%	68%	68%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
8	1	39%	39%	39%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%
9	1	36%	36%	36%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%
10	1	38%	38%	38%	38%	38%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%
11	1	33%	33%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
12	1	39%	39%	39%	39%	39%	39%	39%	39%	60%	60%	60%	60%	60%	60%	60%
13	1	36%	36%	36%	36%	36%	36%	56%	56%	56%	56%	56%	56%	56%	56%	56%
14	1	38%	38%	38%	38%	38%	38%	38%	38%	38%	39%	39%	39%	39%	39%	39%
15	1	51%	51%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%
16	1	56%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%
17	1	44%	44%	44%	44%	44%	44%	33%	33%	33%	33%	33%	33%	33%	33%	33%
18	1	68%	68%	68%	68%	68%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
19	1	58%	58%	58%	58%	58%	58%	58%	58%	55%	55%	55%	55%	55%	55%	55%
20	1	51%	51%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%

Table 4.38: Annual yield per block for Farm A (4,5kg equiv. cartons)

Annual yield per block for farm A (4,5kg/block)																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	2898	2898	2898	2898	2898	2898	2898	0	0	1604	3743	5347	5347	5347	5347
2	1	2198	2198	1934	1934	1934	1934	1934	1934	0	0	1229	2869	4098	4098	4098
3	1	5144	5144	5144	5144	5144	3858	0	0	1611	3759	5370	5370	5370	5370	5370
4	1	4098	3073	3073	3073	2705	2705	2705	2705	2705	0	0	978	2281	3259	3259
5	1	2173	2173	1913	1913	1913	0	0	1487	3469	4955	4955	4955	4955	4955	4955
6	1	3180	3180	3180	3180	3180	3180	3180	3180	3180	2385	0	0	1439	3357	4796
7	1	3270	3270	3270	3270	0	0	954	2226	3180	3180	3180	3180	3180	3180	3180
8	1	2281	2007	2007	0	0	1388	3239	4627	4627	4627	4627	4627	4627	4627	4627
9	1	3259	3259	3259	0	0	1439	3357	4796	4796	4796	4796	4796	4796	4796	4796
10	1	2898	2898	2898	2173	2173	0	0	1341	3128	4469	4469	4469	4469	4469	4469
11	1	1934	1934	0	0	912	2129	3041	3041	3041	3041	3041	3041	3041	3041	3041
12	1	3041	2281	2281	2281	2007	2007	2007	2007	0	0	1574	3672	5246	5246	5246
13	1	978	2281	3259	3259	3259	3259	0	0	1229	2869	4098	4098	4098	4098	4098
14	1	1913	1913	1913	1913	1913	1913	1913	1913	1913	0	0	1059	2470	3529	3529
15	1	3180	2385	0	0	1226	2860	4086	4086	4086	4086	4086	4086	4086	4086	4086
16	1	3073	0	0	869	2028	2898	2898	2898	2898	2898	2898	2898	2898	2898	2898
17	1	4086	4086	4086	4086	4086	4086	0	0	879	2051	2930	2930	2930	2930	2930
18	1	4955	4955	4955	4955	4955	0	0	1543	3601	5144	5144	5144	5144	5144	5144
19	1	4469	4469	4469	4469	4469	4469	4469	4469	0	0	1439	3357	4796	4796	4796
20	1	3180	3180	0	0	1281	2988	4269	4269	4269	4269	4269	4269	4269	4269	4269

Table 4.39: Summary of enterprise budgets for Farm A from year 2020 to 2034 (Block 1 to 4)

Enterprise budget for block 1 from year 2020 to 2034							IRR: 51%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	THS	THS	I75	I75	I75	I75	I75	I75	I75	I75
Yield (4,5kg/block)	2898	2898	2898	2898	2898	2898	2898	0	0	1604	3743	5347	5347	5347	5347
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R117,35	R117,35	R117,35	R117,35	R117,35	R117,35	R117,35	R117,35
Income	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	-	-	R188 243,23	R439 234,20	R627 477,42	R627 477,42	R627 477,42	R627 477,42
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40
Royalties	-	-	-	-	-	-	-	-	-	R14 765,10	R34 451,91	R49 217,01	R49 217,01	R49 217,01	R49 217,01
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R365 842,09	R385 528,89	R400 293,99	R400 293,99	R400 293,99	R400 293,99
Establishment cost	-	-	-	-	-	-	-	R179 726,80	R42 436,12	R47 528,46	R53 231,87	R59 619,69	R66 774,06	-	-
EBITDA	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	-R406 116,80	-R268 826,12	-R225 127,31	R473,44	R167 563,74	R160 409,37	R227 183,43	R227 183,43

Enterprise budget for block 2 from year 2020 to 2034							IRR: 11%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	PSE	PSE	PSE	PSE	PSE	PSE	PSE
Yield (4,5kg/block)	2198	2198	1934	1934	1934	1934	1934	1934	0	0	1229	2869	4098	4098	4098
PIB (R/4,5kg)	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24
Income	R246 019,11	R246 019,11	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	-	-	R194 538,46	R453 923,06	R648 461,52	R648 461,52	R648 461,52
Infield labour	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	-	-	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03
Chemical cost	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	-	-	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44
Royalties	-	-	-	-	-	-	-	-	-	-	R11 898,02	R27 762,05	R39 660,08	R39 660,08	R39 660,08
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R376 465,49	R392 329,52	R404 227,55	R404 227,55	R404 227,55
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95
EBITDA	-R110 309,03	-R110 309,03	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R406 116,80	-R230 131,58	-R186 117,61	R56 900,10	R238 977,31	R238 346,52	R237 640,02

Enterprise budget for block 3 from year 2020 to 2034							IRR: 76%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	TAW	TAW	TAW	TAW	TAW	TAW	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
Yield (4,5kg/block)	5144	5144	5144	5144	5144	3858	0	0	1611	3759	5370	5370	5370	5370	5370
PIB (R/4,5kg)	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29
Income	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R391 895,24	-	-	R359 707,99	R839 318,65	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64
Infield labour	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	-	-	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17
Chemical cost	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	-	-	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04
Royalties	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R37 534,44	-	-	R22 374,42	R52 206,98	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R404 210,83	R226 390,00	R226 390,00	R392 766,63	R422 599,19	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95	R7 385,22	R8 271,45
EBITDA	R105 804,68	R105 804,68	R105 804,68	R105 804,68	R105 804,68	-R12 315,59	-R406 116,80	-R230 131,58	-R37 249,21	R412 026,01	R748 796,37	R748 165,57	R747 459,08	R746 667,81	R745 781,58

Enterprise budget for block 4 from year 2020 to 2034							IRR: 98%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	ATR	ATR	ATR	ATR	ATR	ATR
Yield (4,5kg/block)	4098	3073	3073	3073	2705	2705	2705	2705	2705	0	0	978	2281	3259	3259
PIB (R/4,5kg)	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R135,16	R135,16	R135,16	R135,16	R135,16	R135,16
Income	R648 461,52	R486 346,14	R486 346,14	R486 346,14	R427 984,60	R427 984,60	R427 984,60	R427 984,60	R427 984,60	-	-	R132 152,09	R308 354,89	R440 506,98	R440 506,98
Infield labour	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	-	-	R16 957,03	R16 957,03	R16 957,03	R16 957,03
Chemical cost	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	-	-	R1 297,36	R1 297,36	R1 297,36	R1 297,36
Royalties	R39 660,08	R29 745,06	R29 745,06	R29 745,06	R26 175,65	R26 175,65	R26 175,65	R26 175,65	R26 175,65	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R404 227,55	R394 312,53	R394 312,53	R394 312,53	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R226 390,00	R226 390,00	R355 896,39	R355 896,39	R355 896,39	R355 896,39
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	R244 233,97	R92 033,61	R92 033,61	R92 033,61	R37 241,48	R37 241,48	R37 241,48	R37 241,48	R37 241,48	-R406 116,80	-R230 131,58	-R266 629,41	-R95 572,83	R30 815,51	R24 360,10

Table 4.40: Summary of enterprise budgets for Farm A from year 2020 to 2034 (Block 5 to 8)

Enterprise budget for block 5 from year 2020 to 2034							IRR: 18%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT
Yield (4,5kg/block)	2173	2173	1913	1913	1913	0	0	1487	3469	4955	4955	4955	4955	4955	4955
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75
Income	R281 018,38	R281 018,38	R247 296,17	R247 296,17	R247 296,17	-	-	R169 095,57	R394 556,32	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	-	-	-	-	-	-	-	-
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
EBITDA	-R88 198,02	-R88 198,02	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R245 505,41	-R25 190,87	R138 140,94	R131 685,53	R124 455,47	R191 936,02	R191 936,02	R191 936,02

Enterprise budget for block 6 from year 2020 to 2034							IRR: 9%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	I10	I10	I10	I10	I10
Yield (4,5kg/block)	3180	3180	3180	3180	3180	3180	3180	3180	3180	2385	0	0	1439	3357	4796
PIB (R/4,5kg)	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R226 541,19	-	-	R222 447,58	R519 044,35	R741 491,93
Infield labour	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	-	-	R11 061,70	R11 061,70	R11 061,70
Chemical cost	-	-	-	-	-	-	-	-	-	-	-	-	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08
EBITDA	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R129 712,61	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19

Enterprise budget for block 7 from year 2020 to 2034							IRR: 2%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGT	RGT	RGT	RGT	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH
Yield (4,5kg/block)	3270	3270	3270	3270	0	0	954	2226	3180	3180	3180	3180	3180	3180	3180
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98
Income	R372 010,25	R372 010,25	R372 010,25	R372 010,25	-	-	R90 616,47	R211 438,44	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80
Chemical cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80
Establishment cost	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-
EBITDA	R294,38	R294,38	R294,38	R294,38	-R406 116,80	-R230 131,58	-R308 522,44	-R192 846,68	-R107 993,97	-R114 449,38	-R121 679,44	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88

Enterprise budget for block 8 from year 2020 to 2034							IRR: 14%								Block size (ha): 1
Year	2020	2021	2021	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	CSS	CSS	CSS	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE
Yield (4,5kg/block)	2281	2007	2007	0	0	1388	3239	4627	4627	4627	4627	4627	4627	4627	4627
PIB (R/4,5kg)	R127,84	R127,84	R127,84	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92
Income	R291 600,18	R256 608,16	R256 608,16	-	-	R142 863,25	R333 347,59	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84
Infield labour	R22 191,64	R22 191,64	R22 191,64	-	-	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83
Chemical cost	R1 962,60	R1 962,60	R1 962,60	-	-	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08
Royalties	-	-	-	-	-	R10 544,01	R24 602,68	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R361 619,92	R375 678,59	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
EBITDA	-R70 196,06	-R105 188,08	-R105 188,08	-R406 116,80	-R230 131,58	-R261 641,77	-R90 362,33	R36 193,16	R29 737,75	R22 507,69	R89 988,24	R89 988,24	R89 988,24	R89 988,24	R89 988,24

Table 4.41: Summary of enterprise budgets for Farm A from year 2020 to 2034 (Block 9 to 12))

Enterprise budget for block 9 from year 2020 to 2034							IRR: 51%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	ATR	ATR	ATR	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	3259	3259	3259	0	0	1439	3357	4796	4796	4796	4796	4796	4796	4796	4796
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R440 506,98	R440 506,98	R440 506,98	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93
Infield labour	R16 957,03	R16 957,03	R16 957,03	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R1 297,36	R1 297,36	R1 297,36	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
EBITDA	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19	R283 240,78	R276 010,72	R343 491,27	R343 491,27	R343 491,27	R343 491,27	R343 491,27

Enterprise budget for block 10 from year 2020 to 2034							IRR: 35%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	STL	STL	STL	STL	STL	STL	STL	STL	STL	STL
Yield (4,5kg/block)	2898	2898	2898	2173	2173	0	0	1341	3128	4469	4469	4469	4469	4469	4469
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20
Income	R374 691,17	R374 691,17	R374 691,17	R281 018,38	R281 018,38	-	-	R179 919,51	R419 812,19	R599 731,71	R599 731,71	R599 731,71	R599 731,71	R599 731,71	R599 731,71
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72
Royalties	-	-	-	-	-	-	-	R11 735,66	R27 383,20	R39 118,86	R39 118,86	R39 118,86	R39 118,86	R39 118,86	R39 118,86
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R374 687,75	R390 335,30	R402 070,96	R402 070,96	R402 070,96	R402 070,96	R402 070,96	R402 070,96
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
EBITDA	R5 474,77	R5 474,77	R5 474,77	-R88 198,02	-R88 198,02	-R406 116,80	-R230 131,58	-R237 653,35	-R18 554,43	R143 865,67	R137 410,26	R130 180,20	R197 660,75	R197 660,75	R197 660,75

Enterprise budget for block 11 from year 2020 to 2034							IRR: -100%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS
Yield (4,5kg/block)	1934	1934	0	0	912	2129	3041	3041	3041	3041	3041	3041	3041	3041	3041
PIB (R/4,5kg)	R105,11	R105,11	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88
Income	R203 269,14	R203 269,14	-	-	R101 165,92	R236 053,81	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73
Infield labour	R17 862,54	R17 862,54	-	-	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64
Chemical cost	R823,60	R823,60	-	-	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	-R153 059,00	-R153 059,00	-R406 116,80	-R230 131,58	-R303 515,43	-R173 773,75	-R78 371,59	-R84 827,00	-R92 057,06	-R24 576,51	-R24 576,51	-R24 576,51	-R24 576,51	-R24 576,51	-R24 576,51

Enterprise budget for block 12 from year 2020 to 2034							IRR: 16%								Block size (ha): 1
Year	2020	2021	2021	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	S35	S35	S35	S35	S35	S35	S35
Yield (4,5kg/block)	3041	2281	2281	2281	2007	2007	2007	2007	0	0	1574	3672	5246	5246	5246
PIB (R/4,5kg)	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83
Income	R328 552,02	R246 414,01	R246 414,01	R246 414,01	R216 844,33	R216 844,33	R216 844,33	R216 844,33	-	-	R232 667,03	R542 889,73	R775 556,76	R775 556,76	R775 556,76
Infield labour	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05
Chemical cost	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35
Royalties	-	-	-	-	-	-	-	-	-	-	R15 746,69	R36 742,28	R52 488,98	R52 488,98	R52 488,98
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R391 759,09	R412 754,68	R428 501,37	R428 501,37	R428 501,37
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
EBITDA	-R33 244,23	-R115 382,23	-R115 382,23	-R115 382,23	-R144 951,91	-R144 951,91	-R144 951,91	-R144 951,91	-R406 116,80	-R230 131,58	-R201 977,17	R82 103,73	R293 260,31	R286 804,90	R279 574,84

Table 4.42: Summary of enterprise budgets for Farm A from year 2020 to 2034 (Block 13 to 16)

Enterprise budget for block 13 from year 2020 to 2034							IRR: 33%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	ATR	ATR	ATR	ATR	ATR	ATR	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE
Yield (4,5kg/block)	978	2281	3259	3259	3259	3259	0	0	1229	2869	4098	4098	4098	4098	4098
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R135,16	R135,16	R135,16	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24
Income	R132 152,09	R308 354,89	R440 506,98	R440 506,98	R440 506,98	R440 506,98	-	-	R194 538,46	R453 923,06	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52
Infield labour	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	-	-	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03
Chemical cost	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	-	-	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44
Royalties	-	-	-	-	-	-	-	-	R11 898,02	R27 762,05	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R376 465,49	R392 329,52	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	-R223 744,30	-R47 541,50	R84 610,59	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R224 812,15	R13 562,21	R190 438,89	R183 983,48	R176 753,42	R244 233,97	R244 233,97

Enterprise budget for block 14 from year 2020 to 2034							IRR: -100%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	THS	THS	THS	THS	I17	I17	I17	I17	I17	I17
Yield (4,5kg/block)	1913	1913	1913	1913	1913	1913	1913	1913	1913	0	0	1059	2470	3529	3529
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	-	-	R108 337,97	R252 788,61	R361 126,58	R361 126,58
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R22 454,20	R22 454,20	R22 454,20	R22 454,20
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 825,98	R1 825,98	R1 825,98	R1 825,98
Royalties	-	-	-	-	-	-	-	-	-	-	-	R6 209,34	R14 488,47	R20 697,81	R20 697,81
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R368 131,53	R376 410,65	R382 620,00	R382 620,00
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R302 678,66	-R171 653,37	-R75 288,50	-R81 743,91

Enterprise budget for block 15 from year 2020 to 2034							IRR: 28%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT
Yield (4,5kg/block)	3180	2385	0	0	1226	2860	4086	4086	4086	4086	4086	4086	4086	4086	4086
PIB (R/4,5kg)	R129,30	R129,30	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92
Income	R411 199,21	R308 399,40	-	-	R129 833,75	R302 945,41	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16
Infield labour	R18 611,80	R18 611,80	-	-	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27
Chemical cost	-	-	-	-	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40
Royalties	-	-	-	-	R8 302,77	R19 373,12	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R364 708,44	R375 778,79	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	R54 945,41	-R47 854,40	-R406 116,80	-R230 131,58	-R277 759,80	-R120 864,70	-R5 097,48	-R11 552,89	-R18 782,95	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60

Enterprise budget for block 16 from year 2020 to 2034							IRR: 27%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS
Yield (4,5kg/block)	3073	0	0	869	2028	2898	2898	2898	2898	2898	2898	2898	2898	2898	2898
PIB (R/4,5kg)	R158,24	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30
Income	R486 346,14	-	-	R112 407,35	R262 283,82	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17
Infield labour	R25 051,03	-	-	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60
Chemical cost	R1 874,44	-	-	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80
Royalties	R29 745,06	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R394 312,53	R226 390,00	R226 390,00	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40
Establishment cost	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	-
EBITDA	R92 033,61	-R406 116,80	-R230 131,58	-R299 694,16	-R154 963,91	-R48 320,31	-R54 775,72	-R62 005,78	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77

Table 4.43: Summary of enterprise budgets for Farm A from year 2020 to 2034 (Block 17 to 20)

Enterprise budget for block 17 from year 2020 to 2034							IRR: 61%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	SGT	SGT	SGT	SGT	SGT	SGT	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
Yield (4,5kg/block)	4086	4086	4086	4086	4086	4086	0	0	879	2051	2930	2930	2930	2930	2930
PIB (R/4,5kg)	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11
Income	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	-	-	R92 395,06	R215 588,48	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54
Infield labour	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	-	-	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54
Chemical cost	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	-	-	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60
Royalties	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R226 390,00	R226 390,00	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	-R406 116,80	-R230 131,58	-R306 818,19	-R188 770,98	-R102 139,68	-R108 595,09	-R115 825,15	-R48 344,60	-R48 344,60

Enterprise budget for block 18 from year 2020 to 2034							IRR: 71%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGT	RGT	RGT	RGT	RGT	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW
Yield (4,5kg/block)	4955	4955	4955	4955	4955	0	0	1543	3601	5144	5144	5144	5144	5144	5144
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R113,75	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58
Income	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89	-	-	R156 758,10	R365 768,89	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91
Chemical cost	-	-	-	-	-	-	-	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48
Royalties	-	-	-	-	-	-	-	R15 013,78	R35 032,15	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R381 690,16	R401 708,53	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
EBITDA	R191 936,02	R191 936,02	R191 936,02	R191 936,02	R191 936,02	-R406 116,80	-R230 131,58	-R267 817,18	-R83 970,97	R52 009,59	R45 554,18	R38 324,12	R105 804,68	R105 804,68	R105 804,68

Enterprise budget for block 19 from year 2020 to 2034							IRR: 98%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	STL	STL	STL	STL	STL	STL	STL	STL	I10	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	4469	4469	4469	4469	4469	4469	4469	4469	0	0	1439	3357	4796	4796	4796
PIB (R/4,5kg)	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93	R741 491,93
Infield labour	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
EBITDA	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19	R283 240,78	R276 010,72

Enterprise budget for block 20 from year 2020 to 2034							IRR: 9%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34
Yield (4,5kg/block)	3180	3180	0	0	1281	2988	4269	4269	4269	4269	4269	4269	4269	4269	4269
PIB (R/4,5kg)	R94,98	R94,98	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R302 054,91	R302 054,91	-	-	R131 049,21	R305 781,49	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70
Infield labour	R18 611,80	R18 611,80	-	-	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44
Chemical cost	-	-	-	-	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50
Royalties	-	-	-	-	R7 511,03	R17 525,73	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R364 393,96	R374 408,67	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	-R54 198,88	-R54 198,88	-R406 116,80	-R230 131,58	-R276 229,87	-R116 658,51	R1 115,92	-R5 339,49	-R12 569,55	R54 911,00	R54 911,00	R54 911,00	R54 911,00	R54 911,00	R54 911,00

Table 4.44: Capital budget for Farm A in the Berg River from 2020 to 2034

Capital flow budget for farm A in the Berg River from year 2020 to 2034															Farm size (ha): 20
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Yield (4,5kg/block)	62 209	57 585	50 539	45 418	46 083	44 010	40 949	46 521	48 611	54 133	61 848	71 145	79 541	83 495	84 934
Income	R7 565 350,15	R6 873 161,60	R6 128 345,74	R5 449 965,16	R5 501 949,04	R5 239 800,87	R4 914 365,95	R5 531 580,75	R5 905 393,04	R6 710 803,62	R8 031 547,98	R9 326 485,36	R10 519 239,42	R11 056 326,26	R11 278 773,84
Production cost	R685 795,83	R619 210,28	R563 300,54	R552 466,31	R592 795,68	R555 074,79	R491 386,79	R599 842,05	R640 752,23	R656 722,83	R811 961,13	R931 420,28	R1 008 612,27	R1 033 912,12	R1 048 230,00
Infield labour	R457 454,56	R432 403,53	R377 317,39	R365 001,31	R386 492,80	R319 407,27	R279 314,86	R333 669,40	R347 698,59	R306 054,54	R360 376,52	R399 787,75	R410 849,45	R410 849,45	R410 849,45
Chemical cost	R41 974,80	R40 100,36	R39 276,76	R40 758,60	R47 352,10	R43 281,28	R35 933,04	R38 422,44	R34 604,60	R31 183,76	R36 178,25	R39 301,59	R40 872,29	R40 872,29	R40 872,29
Royalties	R186 366,47	R146 706,39	R146 706,39	R146 706,39	R158 950,78	R192 386,24	R176 138,89	R227 750,21	R258 449,04	R319 484,52	R415 406,36	R492 330,94	R556 890,53	R582 190,38	R596 508,26
Other direct production cost	R6 752 840,00	R6 641 588,00	R6 307 832,00	R6 196 580,00	R6 419 084,00	R6 307 832,00	R6 085 328,00	R6 307 832,00	R6 307 832,00	R6 196 580,00	R6 419 084,00	R6 641 588,00	R6 752 840,00	R6 752 840,00	R6 752 840,00
Fertiliser and organic material	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00
Pesticide and herbicide	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00
Supervision and labour	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00
Fuel, oil, repairs, parts and maintenanc	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00
Licences and insurance	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00
Hired transport	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00
Electricity	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00
Water	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00
Land, property and municipal taxes, ad	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00
Packaging and marketing	R2 225 040,00	R2 113 788,00	R1 780 032,00	R1 668 780,00	R1 891 284,00	R1 780 032,00	R1 557 528,00	R1 780 032,00	R1 780 032,00	R1 668 780,00	R1 891 284,00	R2 113 788,00	R2 225 040,00	R2 225 040,00	R2 225 040,00
Total production Cost	R7 438 635,83	R7 260 798,28	R6 871 132,54	R6 749 046,31	R7 011 879,68	R6 862 906,79	R6 576 714,79	R6 907 674,05	R6 948 584,23	R6 853 302,83	R7 231 045,13	R7 573 008,28	R7 761 452,27	R7 786 752,12	R7 801 070,00
Establishment cost	-	R179 726,80	R542 921,98	R413 563,46	R363 896,62	R826 581,26	R910 988,65	R723 460,41	R1 192 409,02	R875 559,74	R691 481,49	R578 717,69	R460 123,69	R289 395,15	R324 122,57
Trellis system	-	R37 605,60	R112 816,80	R75 211,20	R37 605,60	R112 816,80	R112 816,80	R37 605,60	R112 816,80	R75 211,20	R37 605,60	-	-	-	-
Irrigation system	-	R12 079,60	R36 238,80	R24 159,20	R12 079,60	R36 238,80	R36 238,80	R12 079,60	R36 238,80	R24 159,20	R12 079,60	-	-	-	-
Drainage	-	R6 562,80	R19 688,40	R13 125,60	R6 562,80	R19 688,40	R19 688,40	R6 562,80	R19 688,40	R13 125,60	R6 562,80	-	-	-	-
Fuel oil repairs parts and maintenance	-	R5 427,20	R16 281,60	R10 854,40	R5 427,20	R16 281,60	R16 281,60	R5 427,20	R16 281,60	R10 854,40	R5 427,20	-	-	-	-
Hired transport	-	R183,20	R549,60	R366,40	R183,20	R549,60	R549,60	R183,20	R549,60	R366,40	R183,20	-	-	-	-
Nets	-	R39 731,20	R119 193,60	R79 462,40	R39 731,20	R119 193,60	R119 193,60	R39 731,20	R119 193,60	R79 462,40	R39 731,20	-	-	-	-
Pesticide and herbicde control	-	R1 463,20	R4 389,60	R2 926,40	R1 463,20	R4 389,60	R4 389,60	R1 463,20	R4 389,60	R2 926,40	R1 463,20	-	-	-	-
Soil preparation	-	R29 055,20	R87 165,60	R58 110,40	R29 055,20	R87 165,60	R87 165,60	R29 055,20	R87 165,60	R58 110,40	R29 055,20	-	-	-	-
Supervision, permanent-, seasonal- an	-	R24 800,00	R74 400,00	R49 600,00	R24 800,00	R74 400,00	R74 400,00	R24 800,00	R74 400,00	R49 600,00	R24 800,00	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	R22 818,80	R68 456,40	R45 637,60	R22 818,80	R68 456,40	R68 456,40	R22 818,80	R68 456,40	R45 637,60	R22 818,80	-	-	-	-
Installment	-	-	R3 741,58	R54 109,86	R184 169,82	R287 400,86	R371 808,25	R543 733,61	R653 228,62	R516 106,14	R511 754,69	R578 717,69	R460 123,69	R289 395,15	R324 122,57
EBITDA	R126 714,33	-R567 363,48	-R1 285 708,78	-R1 712 644,61	-R1 873 827,27	-R2 449 687,18	-R2 573 337,49	-R2 099 553,71	-R2 235 600,21	-R1 018 058,95	R109 021,36	R1 174 759,39	R2 297 663,46	R2 980 178,99	R3 153 581,27

Table 4.45: Enterprise budget for Farm A block no. 1 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 1 in the Berg River from 2020 to 2034																block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	THS	THS	THS	THS	THS	THS	THS	I75	I75	I75	I75	I75	I75	I75	I75	
Yield (4,5kg/block)	2 898	2 898	2 898	2 898	2 898	2 898	2 898	-	-	1 604	3 743	5 347	5 347	5 347	5 347	
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R184,09	R184,09	R184,09	R184,09	R184,09	R184,09	R184,09	R184,09	
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R174,55	R174,55	R174,55	R174,55	R174,55	R174,55	R174,55	R174,55	
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R172,98	R172,98	R172,98	R172,98	R172,98	R172,98	R172,98	R172,98	
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R117,35	R117,35	R117,35	R117,35	R117,35	R117,35	R117,35	R117,35	
Income	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	-	-	R188 243,23	R439 234,20	R627 477,42	R627 477,42	R627 477,42	R627 477,42	
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R28 200,09	R47 886,89	R62 651,99	R62 651,99	R62 651,99	R62 651,99	
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	
Royalties	-	-	-	-	-	-	-	-	-	R14 765,10	R34 451,91	R49 217,01	R49 217,01	R49 217,01	R49 217,01	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R365 842,09	R385 528,89	R400 293,99	R400 293,99	R400 293,99	R400 293,99	
Establishment cost	-	-	-	-	-	-	-	R179 726,80	R42 436,12	R47 528,46	R53 231,87	R59 619,69	R66 774,06	-	-	
Trellis system	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	
Irrigation system	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	
Drainage	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	
Hired transport	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	
Nets	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	
Pesticide and herbicde control	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	
Soil preparation	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vines	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	
Installment	-	-	-	-	-	-	-	-	R42 436,12	R47 528,46	R53 231,87	R59 619,69	R66 774,06	-	-	
EBITDA	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	-R406 116,80	-R268 826,12	-R225 127,31	R473,44	R167 563,74	R160 409,37	R227 183,43	R227 183,43	

Table 4.46: Enterprise budget for Farm A block no. 2 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 2 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	PSE	PSE	PSE	PSE	PSE	PSE	PSE
Yield (4,5kg/block)	2 198	2 198	1 934	1 934	1 934	1 934	1 934	1 934	-	-	1 229	2 869	4 098	4 098	4 098
FOB (R/4,5kg)	R118,97	R118,97	R118,97	R118,97	R118,97	R118,97	R118,97	R118,97	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56
DIP (R/4,5kg)	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38
Ex-works (R/4,5kg)	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96
PIB (R/4,5kg)	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24
Income	R246 019,11	R246 019,11	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	-	-	R194 538,46	R453 923,06	R648 461,52	R648 461,52	R648 461,52
Production cost	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	-	-	R38 823,49	R54 687,52	R66 585,55	R66 585,55	R66 585,55
Infield labour	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	-	-	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03
Chemical cost	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	-	-	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44
Royalties	-	-	-	-	-	-	-	-	-	-	R11 898,02	R27 762,05	R39 660,08	R39 660,08	R39 660,08
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R376 465,49	R392 329,52	R404 227,55	R404 227,55	R404 227,55
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95
Trellis system	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95
EBITDA	-R110 309,03	-R110 309,03	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R406 116,80	-R230 131,58	-R186 117,61	R56 900,10	R238 977,31	R238 346,52	R237 640,02

Table 4.47: Enterprise budget for Farm A block no. 3 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 3 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	TAW	TAW	TAW	TAW	TAW	TAW	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
Yield (4,5kg/block)	5 144	5 144	5 144	5 144	5 144	3 858	-	-	1 611	3 759	5 370	5 370	5 370	5 370	5 370
FOB (R/4,5kg)	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28
DIP (R/4,5kg)	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79
Ex-works (R/4,5kg)	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78
PIB (R/4,5kg)	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29
Income	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R391 895,24	-	-	R359 707,99	R839 318,65	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64
Production cost	R79 080,31	R79 080,31	R79 080,31	R79 080,31	R79 080,31	R66 568,83	-	-	R55 124,63	R84 957,19	R107 331,61	R107 331,61	R107 331,61	R107 331,61	R107 331,61
Infield labour	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	-	-	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17
Chemical cost	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	-	-	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04
Royalties	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R37 534,44	-	-	R22 374,42	R52 206,98	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R404 210,83	R226 390,00	R226 390,00	R392 766,63	R422 599,19	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95	R7 385,22	R8 271,45
Trellis system	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95	R7 385,22	R8 271,45
EBITDA	R105 804,68	R105 804,68	R105 804,68	R105 804,68	R105 804,68	-R12 315,59	-R406 116,80	-R230 131,58	-R37 249,21	R412 026,01	R748 796,37	R748 165,57	R747 459,08	R746 667,81	R745 781,58

Table 4.48: Enterprise budget for Farm A block no. 4 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 4 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	ATR	ATR	ATR	ATR	ATR	ATR
Yield (4,5kg/block)	4 098	3 073	3 073	3 073	2 705	2 705	2 705	2 705	2 705	-	-	978	2 281	3 259	3 259
FOB (R/4,5kg)	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R151,86	R151,86	R151,86	R151,86	R151,86	R151,86
DIP (R/4,5kg)	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R145,53	R145,53	R145,53	R145,53	R145,53	R145,53
Ex-works (R/4,5kg)	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R144,64	R144,64	R144,64	R144,64	R144,64	R144,64
PIB (R/4,5kg)	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R135,16	R135,16	R135,16	R135,16	R135,16	R135,16
Income	R648 461,52	R486 346,14	R486 346,14	R486 346,14	R427 984,60	R427 984,60	R427 984,60	R427 984,60	R427 984,60	-	-	R132 152,09	R308 354,89	R440 506,98	R440 506,98
Production cost	R66 585,55	R56 670,53	R56 670,53	R56 670,53	R53 101,12	R53 101,12	R53 101,12	R53 101,12	R53 101,12	-	-	R18 254,39	R18 254,39	R18 254,39	R18 254,39
Infield labour	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	-	-	R16 957,03	R16 957,03	R16 957,03	R16 957,03
Chemical cost	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	-	-	R1 297,36	R1 297,36	R1 297,36	R1 297,36
Royalties	R39 660,08	R29 745,06	R29 745,06	R29 745,06	R26 175,65	R26 175,65	R26 175,65	R26 175,65	R26 175,65	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R404 227,55	R394 312,53	R394 312,53	R394 312,53	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R226 390,00	R226 390,00	R355 896,39	R355 896,39	R355 896,39	R355 896,39
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
Trellis system	-	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	R244 233,97	R92 033,61	R92 033,61	R92 033,61	R37 241,48	R37 241,48	R37 241,48	R37 241,48	R37 241,48	-R406 116,80	-R230 131,58	-R266 629,41	-R95 572,83	R30 815,51	R24 360,10

Table 4.49: Enterprise budget for Farm A block no. 5 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 5 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT	RGT
Yield (4,5kg/block)	2 173	2 173	1 913	1 913	1 913	-	-	1 487	3 469	4 955	4 955	4 955	4 955	4 955	4 955
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R130,03	R130,03	R130,03	R130,03	R130,03	R130,03	R130,03	R130,03	R130,03	R130,03
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R124,09	R124,09	R124,09	R124,09	R124,09	R124,09	R124,09	R124,09	R124,09	R124,09
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R123,02	R123,02	R123,02	R123,02	R123,02	R123,02	R123,02	R123,02	R123,02	R123,02
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75	R113,75
Income	R281 018,38	R281 018,38	R247 296,17	R247 296,17	R247 296,17	-	-	R169 095,57	R394 556,32	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	-	-	-	-	-	-	-	-
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
Trellis system	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
EBITDA	-R88 198,02	-R88 198,02	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R245 505,41	-R25 190,87	R138 140,94	R131 685,53	R124 455,47	R191 936,02	R191 936,02	R191 936,02

Table 4.50: Enterprise budget for Farm A block no. 6 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 6 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	I10	I10	I10	I10	I10
Yield (4,5kg/block)	3 180	3 180	3 180	3 180	3 180	3 180	3 180	3 180	3 180	2 385	-	-	1 439	3 357	4 796
FOB (R/4,5kg)	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R199,03	R199,03	R199,03	R199,03	R199,03
DIP (R/4,5kg)	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R190,13	R190,13	R190,13	R190,13	R190,13
Ex-works (R/4,5kg)	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R188,79	R188,79	R188,79	R188,79	R188,79
PIB (R/4,5kg)	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R226 541,19	-	-	R222 447,58	R519 044,35	R741 491,93
Production cost	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	-	-	R26 950,27	R46 040,78	R60 358,66
Infield labour	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	-	-	R11 061,70	R11 061,70	R11 061,70
Chemical cost	-	-	-	-	-	-	-	-	-	-	-	-	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08
Trellis system	-	-	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	-	-	R183,20	-	-	-	-
Nets	-	-	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08
EBITDA	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R129 712,61	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19

Table 4.51: Enterprise budget for Farm A block no. 7 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 7 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGT	RGT	RGT	RGT	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH
Yield (4,5kg/block)	3 270	3 270	3 270	3 270	-	-	954	2 226	3 180	3 180	3 180	3 180	3 180	3 180	3 180
FOB (R/4,5kg)	R130,03	R130,03	R130,03	R130,03	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36
DIP (R/4,5kg)	R124,09	R124,09	R124,09	R124,09	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72
Ex-works (R/4,5kg)	R123,02	R123,02	R123,02	R123,02	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98
Income	R372 010,25	R372 010,25	R372 010,25	R372 010,25	-	-	R90 616,47	R211 438,44	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91
Production cost	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80
Chemical cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80
Establishment cost	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-
Trellis system	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	-
Nets	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-
EBITDA	R294,38	R294,38	R294,38	R294,38	-R406 116,80	-R230 131,58	-R308 522,44	-R192 846,68	-R107 993,97	-R114 449,38	-R121 679,44	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88

Table 4.52: Enterprise budget for Farm A block no. 8 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 8 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	CSS	CSS	CSS	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE
Yield (4,5kg/block)	2 281	2 007	2 007	-	-	1 388	3 239	4 627	4 627	4 627	4 627	4 627	4 627	4 627	4 627
FOB (R/4,5kg)	R179,87	R179,87	R179,87	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92
DIP (R/4,5kg)	R168,18	R168,18	R168,18	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81
Ex-works (R/4,5kg)	R161,43	R161,43	R161,43	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47
PIB (R/4,5kg)	R127,84	R127,84	R127,84	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92
Income	R291 600,18	R256 608,16	R256 608,16	-	-	R142 863,25	R333 347,59	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84
Production cost	R24 154,24	R24 154,24	R24 154,24	-	-	R23 977,92	R38 036,59	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60
Infield labour	R22 191,64	R22 191,64	R22 191,64	-	-	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83
Chemical cost	R1 962,60	R1 962,60	R1 962,60	-	-	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08
Royalties	-	-	-	-	-	R10 544,01	R24 602,68	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R361 619,92	R375 678,59	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
Trellis system	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
EBITDA	-R70 196,06	-R105 188,08	-R105 188,08	-R406 116,80	-R230 131,58	-R261 641,77	-R90 362,33	R36 193,16	R29 737,75	R22 507,69	R89 988,24	R89 988,24	R89 988,24	R89 988,24	R89 988,24

Table 4.53: Enterprise budget for Farm A block no. 9 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 9 in the Berg River from 2020 to 2034																block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	ATR	ATR	ATR	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	I10	
Yield (4,5kg/block)	3 259	3 259	3 259	-	-	1 439	3 357	4 796	4 796	4 796	4 796	4 796	4 796	4 796	4 796	
FOB (R/4,5kg)	R151,86	R151,86	R151,86	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	
DIP (R/4,5kg)	R145,53	R145,53	R145,53	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	
Ex-works (R/4,5kg)	R144,64	R144,64	R144,64	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	
Income	R440 506,98	R440 506,98	R440 506,98	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	R741 491,93	
Production cost	R18 254,39	R18 254,39	R18 254,39	-	-	R26 950,27	R46 040,78	R60 358,66	R60 358,66	R60 358,66	R60 358,66	R60 358,66	R60 358,66	R60 358,66	R60 358,66	
Infield labour	R16 957,03	R16 957,03	R16 957,03	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70	
Chemical cost	R1 297,36	R1 297,36	R1 297,36	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70	
Royalties	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	R47 726,26	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	R398 000,66	
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	
Trellis system	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	
Irrigation system	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	
Drainage	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	
Fuel oil repairs parts and maintenance	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	
Hired transport	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	
Nets	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	
Pesticide and herbicde control	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	
Soil preparation	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	
Supervision, permanent-, seasonal- an	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vines	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	
Installment	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	
EBITDA	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19	R283 240,78	R276 010,72	R343 491,27	R343 491,27	R343 491,27	R343 491,27	R343 491,27	

Table 4.54: Enterprise budget for Farm A block no. 10 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 10 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	STL	STL	STL	STL	STL	STL	STL	STL	STL	STL
Yield (4,5kg/block)	2 898	2 898	2 898	2 173	2 173	-	-	1 341	3 128	4 469	4 469	4 469	4 469	4 469	4 469
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R175,07	R175,07	R175,07	R175,07	R175,07	R175,07	R175,07	R175,07	R175,07	R175,07
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R165,73	R165,73	R165,73	R165,73	R165,73	R165,73	R165,73	R165,73	R165,73	R165,73
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R161,81	R161,81	R161,81	R161,81	R161,81	R161,81	R161,81	R161,81	R161,81	R161,81
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20	R134,20
Income	R374 691,17	R374 691,17	R374 691,17	R281 018,38	R281 018,38	-	-	R179 919,51	R419 812,19	R599 731,71	R599 731,71	R599 731,71	R599 731,71	R599 731,71	R599 731,71
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R37 045,75	R52 693,30	R64 428,96	R64 428,96	R64 428,96	R64 428,96	R64 428,96	R64 428,96
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72
Royalties	-	-	-	-	-	-	-	R11 735,66	R27 383,20	R39 118,86	R39 118,86	R39 118,86	R39 118,86	R39 118,86	R39 118,86
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R374 687,75	R390 335,30	R402 070,96	R402 070,96	R402 070,96	R402 070,96	R402 070,96	R402 070,96
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
Trellis system	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
EBITDA	R5 474,77	R5 474,77	R5 474,77	-R88 198,02	-R88 198,02	-R406 116,80	-R230 131,58	-R237 653,35	-R18 554,43	R143 865,67	R137 410,26	R130 180,20	R197 660,75	R197 660,75	R197 660,75

Table 4.55: Enterprise budget for Farm A block no. 11 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 11 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS
Yield (4,5kg/block)	1 934	1 934	-	-	912	2 129	3 041	3 041	3 041	3 041	3 041	3 041	3 041	3 041	3 041
FOB (R/4,5kg)	R111,83	R111,83	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76
DIP (R/4,5kg)	R109,38	R109,38	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43
Ex-works (R/4,5kg)	R109,38	R109,38	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25
PIB (R/4,5kg)	R105,11	R105,11	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88
Income	R203 269,14	R203 269,14	-	-	R101 165,92	R236 053,81	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73
Production cost	R18 686,14	R18 686,14	-	-	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24
Infield labour	R17 862,54	R17 862,54	-	-	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64
Chemical cost	R823,60	R823,60	-	-	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
Trellis system	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	-R153 059,00	-R153 059,00	-R406 116,80	-R230 131,58	-R303 515,43	-R173 773,75	-R78 371,59	-R84 827,00	-R92 057,06	-R24 576,51	-R24 576,51	-R24 576,51	-R24 576,51	-R24 576,51	-R24 576,51

Table 4.56: Enterprise budget for Farm A block no. 12 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 12 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	S35	S35	S35	S35	S35	S35	S35
Yield (4,5kg/block)	3 041	2 281	2 281	2 281	2 007	2 007	2 007	2 007	-	-	1 574	3 672	5 246	5 246	5 246
FOB (R/4,5kg)	R113,85	R113,85	R113,85	R113,85	R113,85	R113,85	R113,85	R113,85	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10
DIP (R/4,5kg)	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18
Ex-works (R/4,5kg)	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57
PIB (R/4,5kg)	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83
Income	R328 552,02	R246 414,01	R246 414,01	R246 414,01	R216 844,33	R216 844,33	R216 844,33	R216 844,33	-	-	R232 667,03	R542 889,73	R775 556,76	R775 556,76	R775 556,76
Production cost	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	-	-	R54 117,09	R75 112,68	R90 859,37	R90 859,37	R90 859,37
Infield labour	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05
Chemical cost	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35
Royalties	-	-	-	-	-	-	-	-	-	-	R15 746,69	R36 742,28	R52 488,98	R52 488,98	R52 488,98
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R391 759,09	R412 754,68	R428 501,37	R428 501,37	R428 501,37
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
Trellis system	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
EBITDA	-R33 244,23	-R115 382,23	-R115 382,23	-R115 382,23	-R144 951,91	-R144 951,91	-R144 951,91	-R144 951,91	-R406 116,80	-R230 131,58	-R201 977,17	R82 103,73	R293 260,31	R286 804,90	R279 574,84

Table 4.57: Enterprise budget for Farm A block no. 13 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 13 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	ATR	ATR	ATR	ATR	ATR	ATR	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE
Yield (4,5kg/block)	978	2 281	3 259	3 259	3 259	3 259	-	-	1 229	2 869	4 098	4 098	4 098	4 098	4 098
FOB (R/4,5kg)	R151,86	R151,86	R151,86	R151,86	R151,86	R151,86	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56
DIP (R/4,5kg)	R145,53	R145,53	R145,53	R145,53	R145,53	R145,53	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38
Ex-works (R/4,5kg)	R144,64	R144,64	R144,64	R144,64	R144,64	R144,64	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R135,16	R135,16	R135,16	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24
Income	R132 152,09	R308 354,89	R440 506,98	R440 506,98	R440 506,98	R440 506,98	-	-	R194 538,46	R453 923,06	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52
Production cost	R18 254,39	R18 254,39	R18 254,39	R18 254,39	R18 254,39	R18 254,39	-	-	R38 823,49	R54 687,52	R66 585,55	R66 585,55	R66 585,55	R66 585,55	R66 585,55
Infield labour	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	-	-	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03
Chemical cost	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	-	-	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44
Royalties	-	-	-	-	-	-	-	-	R11 898,02	R27 762,05	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R376 465,49	R392 329,52	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
Trellis system	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	-R223 744,30	-R47 541,50	R84 610,59	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R224 812,15	R13 562,21	R190 438,89	R183 983,48	R176 753,42	R244 233,97	R244 233,97

Table 4.58: Enterprise budget for Farm A block no. 14 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 14 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	THS	THS	THS	THS	I17	I17	I17	I17	I17	I17
Yield (4,5kg/block)	1 913	1 913	1 913	1 913	1 913	1 913	1 913	1 913	1 913	-	-	1 059	2 470	3 529	3 529
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	-	-	R108 337,97	R252 788,61	R361 126,58	R361 126,58
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R30 489,53	R38 768,65	R44 978,00	R44 978,00
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R22 454,20	R22 454,20	R22 454,20	R22 454,20
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 825,98	R1 825,98	R1 825,98	R1 825,98
Royalties	-	-	-	-	-	-	-	-	-	-	-	R6 209,34	R14 488,47	R20 697,81	R20 697,81
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R368 131,53	R376 410,65	R382 620,00	R382 620,00
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
Trellis system	-	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R302 678,66	-R171 653,37	-R75 288,50	-R81 743,91

Table 4.59: Enterprise budget for Farm A block no. 15 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 15 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT	SGT
Yield (4,5kg/block)	3 180	2 385	-	-	1 226	2 860	4 086	4 086	4 086	4 086	4 086	4 086	4 086	4 086	4 086
FOB (R/4,5kg)	R145,80	R145,80	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47
DIP (R/4,5kg)	R139,57	R139,57	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02
Ex-works (R/4,5kg)	R138,68	R138,68	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45
PIB (R/4,5kg)	R129,30	R129,30	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92
Income	R411 199,21	R308 399,40	-	-	R129 833,75	R302 945,41	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16
Production cost	R18 611,80	R18 611,80	-	-	R27 066,44	R38 136,79	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56
Infield labour	R18 611,80	R18 611,80	-	-	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27
Chemical cost	-	-	-	-	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40
Royalties	-	-	-	-	R8 302,77	R19 373,12	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R364 708,44	R375 778,79	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
Trellis system	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	R54 945,41	-R47 854,40	-R406 116,80	-R230 131,58	-R277 759,80	-R120 864,70	-R5 097,48	-R11 552,89	-R18 782,95	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60

Table 4.60: Enterprise budget for Farm A block no. 16 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 16 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS	THS
Yield (4,5kg/block)	3 073	-	-	869	2 028	2 898	2 898	2 898	2 898	2 898	2 898	2 898	2 898	2 898	2 898
FOB (R/4,5kg)	R193,56	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80
DIP (R/4,5kg)	R183,38	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57
Ex-works (R/4,5kg)	R182,96	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68
PIB (R/4,5kg)	R158,24	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30
Income	R486 346,14	-	-	R112 407,35	R262 283,82	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17
Production cost	R56 670,53	-	-	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40
Infield labour	R25 051,03	-	-	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60
Chemical cost	R1 874,44	-	-	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80
Royalties	R29 745,06	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R394 312,53	R226 390,00	R226 390,00	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40
Establishment cost	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	-
Trellis system	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	-
EBITDA	R92 033,61	-R406 116,80	-R230 131,58	-R299 694,16	-R154 963,91	-R48 320,31	-R54 775,72	-R62 005,78	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77

Table 4.61: Enterprise budget for Farm A block no. 17 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 17 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	SGT	SGT	SGT	SGT	SGT	SGT	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
Yield (4,5kg/block)	4 086	4 086	4 086	4 086	4 086	4 086	-	-	879	2 051	2 930	2 930	2 930	2 930	2 930
FOB (R/4,5kg)	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83
DIP (R/4,5kg)	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38
Ex-works (R/4,5kg)	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38
PIB (R/4,5kg)	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11
Income	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	-	-	R92 395,06	R215 588,48	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54
Production cost	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	-	-	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14
Infield labour	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	-	-	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54
Chemical cost	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	-	-	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60
Royalties	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R226 390,00	R226 390,00	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14
Establishment cost	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
Trellis system	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	-R406 116,80	-R230 131,58	-R306 818,19	-R188 770,98	-R102 139,68	-R108 595,09	-R115 825,15	-R48 344,60	-R48 344,60

Table 4.62: Enterprise budget for Farm A block no. 18 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 18 in the Berg River from 2020 to 2034																block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	RGT	RGT	RGT	RGT	RGT	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	
Yield (4,5kg/block)	4 955	4 955	4 955	4 955	4 955	-	-	1 543	3 601	5 144	5 144	5 144	5 144	5 144	5 144	
FOB (R/4,5kg)	R130,03	R130,03	R130,03	R130,03	R130,03	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	
DIP (R/4,5kg)	R124,09	R124,09	R124,09	R124,09	R124,09	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	
Ex-works (R/4,5kg)	R123,02	R123,02	R123,02	R123,02	R123,02	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R113,75	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	
Income	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89	-	-	R156 758,10	R365 768,89	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	
Production cost	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R44 048,16	R64 066,53	R79 080,31	R79 080,31	R79 080,31	R79 080,31	R79 080,31	R79 080,31	
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	
Chemical cost	-	-	-	-	-	-	-	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	
Royalties	-	-	-	-	-	-	-	R15 013,78	R35 032,15	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R381 690,16	R401 708,53	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
Trellis system	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	
Irrigation system	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	
Drainage	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	
Fuel oil repairs parts and maintenance	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	
Hired transport	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	
Nets	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	
Pesticide and herbicde control	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	
Soil preparation	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	
Supervision, permanent-, seasonal- an	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vines	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	
Installment	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
EBITDA	R191 936,02	R191 936,02	R191 936,02	R191 936,02	R191 936,02	-R406 116,80	-R230 131,58	-R267 817,18	-R83 970,97	R52 009,59	R45 554,18	R38 324,12	R105 804,68	R105 804,68	R105 804,68	

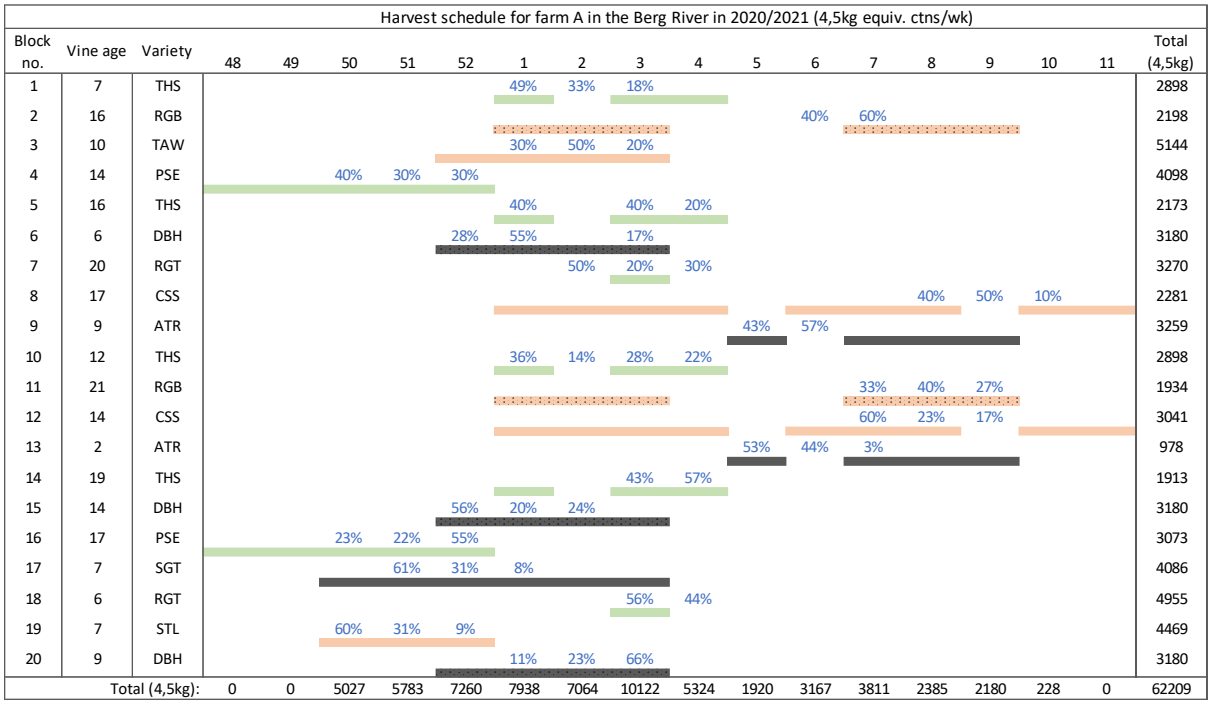
Table 4.63: Enterprise budget for Farm A block no. 19 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 19 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	STL	STL	STL	STL	STL	STL	STL	STL	I10	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	4 469	4 469	4 469	4 469	4 469	4 469	4 469	4 469	-	-	1 439	3 357	4 796	4 796	4 796
FOB (R/4,5kg)	R175,61	R175,61	R175,61	R175,61	R175,61	R175,61	R175,61	R175,61	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03
DIP (R/4,5kg)	R166,26	R166,26	R166,26	R166,26	R166,26	R166,26	R166,26	R166,26	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13
Ex-works (R/4,5kg)	R162,34	R162,34	R162,34	R162,34	R162,34	R162,34	R162,34	R162,34	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79
PIB (R/4,5kg)	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93	R741 491,93
Production cost	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	-	-	R26 950,27	R46 040,78	R60 358,66	R60 358,66	R60 358,66
Infield labour	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
Trellis system	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
EBITDA	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19	R283 240,78	R276 010,72

Table 4.64: Enterprise budget for Farm A block no. 20 in the Berg River from 2020 to 2034

Enterprise budget for farm A block no. 20 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34	S34
Yield (4,5kg/block)	3 180	3 180	-	-	1 281	2 988	4 269	4 269	4 269	4 269	4 269	4 269	4 269	4 269	4 269
FOB (R/4,5kg)	R113,36	R113,36	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30
DIP (R/4,5kg)	R107,72	R107,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
Ex-works (R/4,5kg)	R105,30	R105,30	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
PIB (R/4,5kg)	R94,98	R94,98	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R302 054,91	R302 054,91	-	-	R131 049,21	R305 781,49	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70	R436 830,70
Production cost	R18 611,80	R18 611,80	-	-	R26 751,96	R36 766,67	R44 277,70	R44 277,70	R44 277,70	R44 277,70	R44 277,70	R44 277,70	R44 277,70	R44 277,70	R44 277,70
Infield labour	R18 611,80	R18 611,80	-	-	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44	R18 470,44
Chemical cost	-	-	-	-	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50	R770,50
Royalties	-	-	-	-	R7 511,03	R17 525,73	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76	R25 036,76
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R364 393,96	R374 408,67	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70	R381 919,70
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
Trellis system	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	-R54 198,88	-R54 198,88	-R406 116,80	-R230 131,58	-R276 229,87	-R116 658,51	R1 115,92	-R5 339,49	-R12 569,55	R54 911,00	R54 911,00	R54 911,00	R54 911,00	R54 911,00	R54 911,00

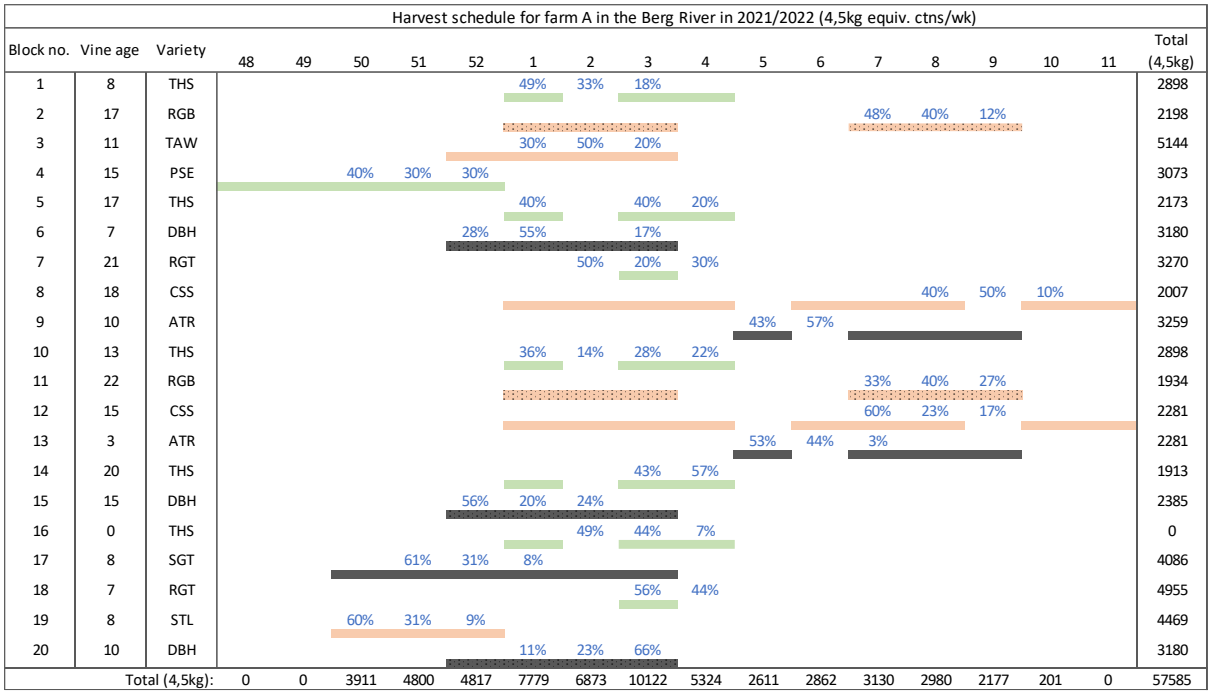
Figure 4.33: Harvest schedule for Farm A in the Berg River for 2020/2021 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2020/2021 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	7	THS						49%	33%	18%									2898
2	16	RGB											40%	60%					2198
3	10	TAW						30%	50%	20%									5144
4	14	PSE			40%	30%	30%												4098
5	16	THS						40%		40%	20%								2173
6	6	DBH					28%	55%		17%									3180
7	20	RGT							50%	20%	30%								3270
8	17	CSS													40%	50%	10%		2281
9	9	ATR										43%	57%						3259
10	12	THS						36%	14%	28%	22%								2898
11	21	RGB												33%	40%	27%			1934
12	14	CSS												60%	23%	17%			3041
13	2	ATR										53%	44%	3%					978
14	19	THS								43%	57%								1913
15	14	DBH					56%	20%	24%										3180
16	17	PSE			23%	22%	55%												3073
17	7	SGT				61%	31%	8%											4086
18	6	RGT								56%	44%								4955
19	7	STL			60%	31%	9%												4469
20	9	DBH						11%	23%	66%									3180
		Total (4,5kg):	0	0	5027	5783	7260	7938	7064	10122	5324	1920	3167	3811	2385	2180	228	0	62209

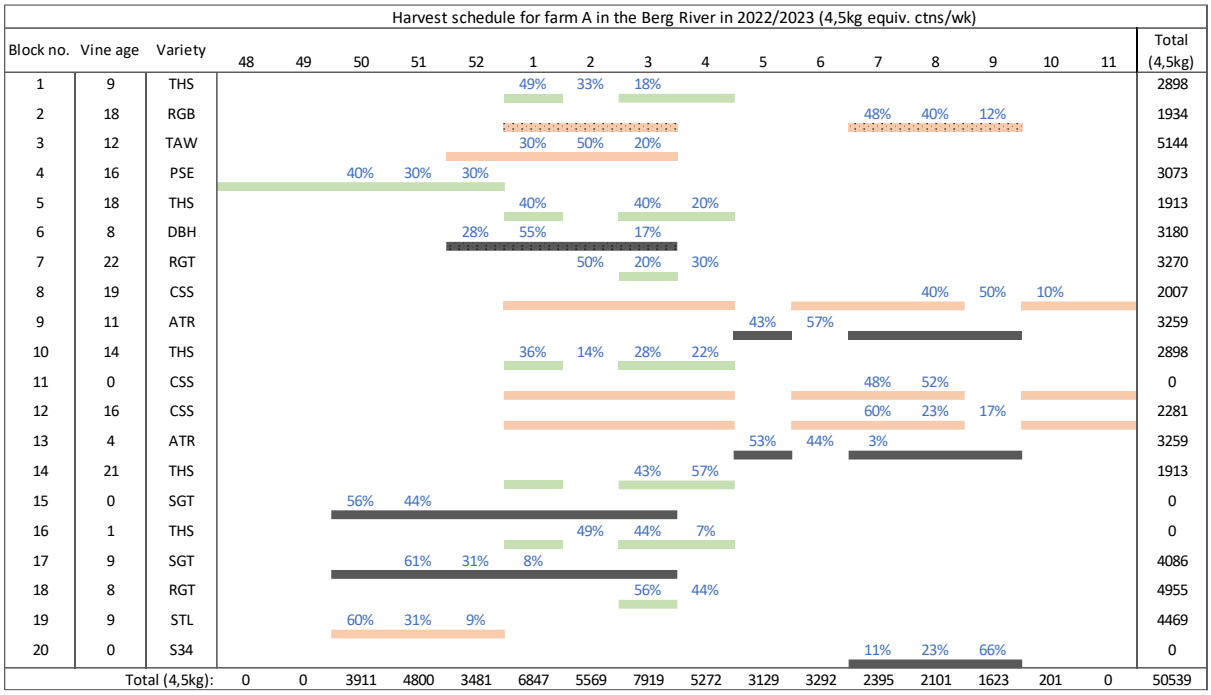
Figure 4.34: Harvest schedule for Farm A in the Berg River for 2021/2022 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2021/2022 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	8	THS						49%	33%	18%									2898
2	17	RGB												48%	40%	12%			2198
3	11	TAW						30%	50%	20%									5144
4	15	PSE			40%	30%	30%												3073
5	17	THS						40%		40%	20%								2173
6	7	DBH					28%	55%		17%									3180
7	21	RGT							50%	20%	30%								3270
8	18	CSS													40%	50%	10%		2007
9	10	ATR										43%	57%						3259
10	13	THS						36%	14%	28%	22%								2898
11	22	RGB												33%	40%	27%			1934
12	15	CSS												60%	23%	17%			2281
13	3	ATR										53%	44%	3%					2281
14	20	THS								43%	57%								1913
15	15	DBH					56%	20%	24%										2385
16	0	THS							49%	44%	7%								0
17	8	SGT				61%	31%	8%											4086
18	7	RGT								56%	44%								4955
19	8	STL			60%	31%	9%												4469
20	10	DBH						11%	23%	66%									3180
		Total (4,5kg):	0	0	3911	4800	4817	7779	6873	10122	5324	2611	2862	3130	2980	2177	201	0	57585

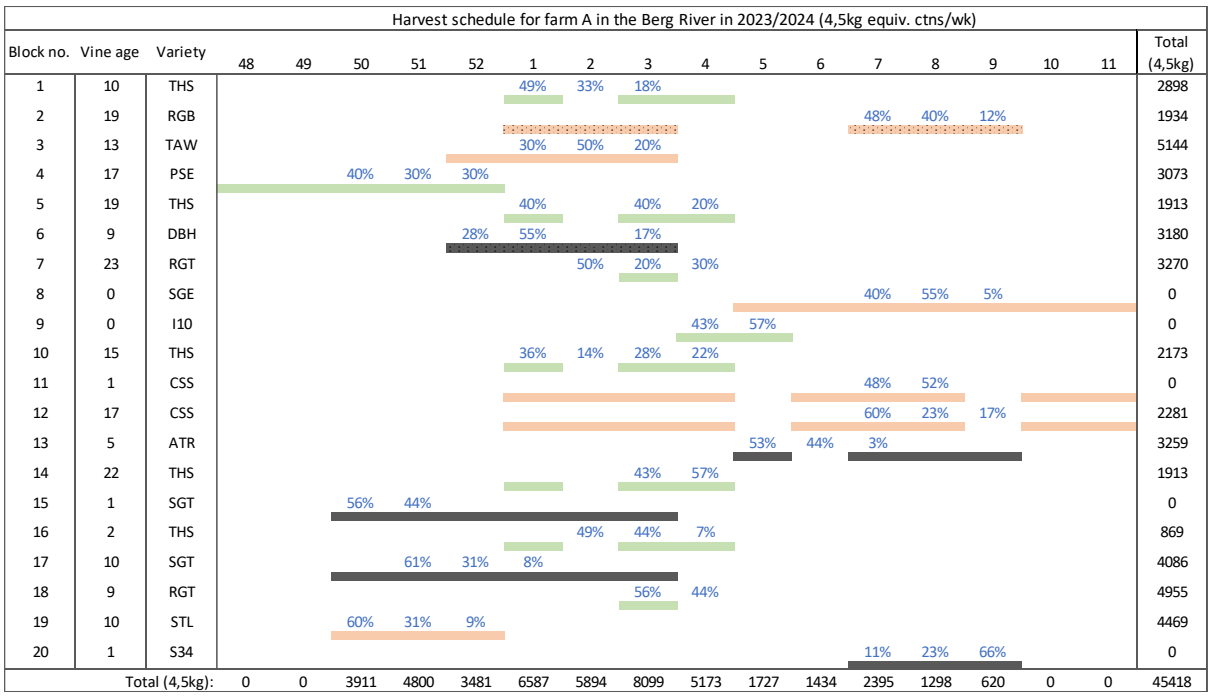
Figure 4.35: Harvest schedule for Farm A in the Berg River for 2022/2023 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2022/2023 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	9	THS						49%	33%	18%									2898
2	18	RGB												48%	40%	12%			1934
3	12	TAW						30%	50%	20%									5144
4	16	PSE			40%	30%	30%												3073
5	18	THS						40%		40%	20%								1913
6	8	DBH					28%	55%		17%									3180
7	22	RGT							50%	20%	30%								3270
8	19	CSS													40%	50%	10%		2007
9	11	ATR										43%	57%						3259
10	14	THS						36%	14%	28%	22%								2898
11	0	CSS												48%	52%				0
12	16	CSS												60%	23%	17%			2281
13	4	ATR										53%	44%	3%					3259
14	21	THS								43%	57%								1913
15	0	SGT			56%	44%													0
16	1	THS							49%	44%	7%								0
17	9	SGT				61%	31%	8%											4086
18	8	RGT								56%	44%								4955
19	9	STL			60%	31%	9%												4469
20	0	S34												11%	23%	66%			0
		Total (4,5kg):	0	0	3911	4800	3481	6847	5569	7919	5272	3129	3292	2395	2101	1623	201	0	50539

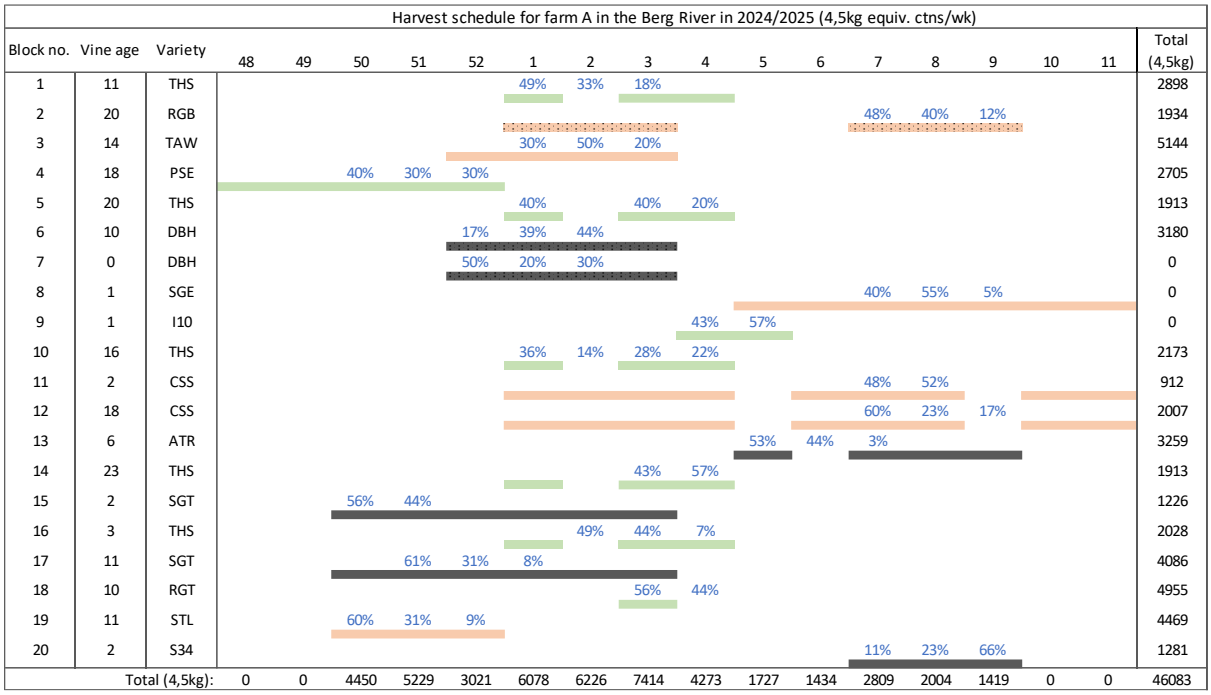
Figure 4.36: Harvest schedule for Farm A in the Berg River for 2023/2024 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2023/2024 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	10	THS						49%	33%	18%									2898
2	19	RGB												48%	40%	12%			1934
3	13	TAW						30%	50%	20%									5144
4	17	PSE			40%	30%	30%												3073
5	19	THS						40%		40%	20%								1913
6	9	DBH					28%	55%		17%									3180
7	23	RGT							50%	20%	30%								3270
8	0	SGE												40%	55%	5%			0
9	0	I10									43%	57%							0
10	15	THS						36%	14%	28%	22%								2173
11	1	CSS												48%	52%				0
12	17	CSS												60%	23%	17%			2281
13	5	ATR										53%	44%	3%					3259
14	22	THS								43%	57%								1913
15	1	SGT			56%	44%													0
16	2	THS							49%	44%	7%								869
17	10	SGT				61%	31%	8%											4086
18	9	RGT								56%	44%								4955
19	10	STL			60%	31%	9%												4469
20	1	S34												11%	23%	66%			0
		Total (4,5kg):	0	0	3911	4800	3481	6587	5894	8099	5173	1727	1434	2395	1298	620	0	0	45418

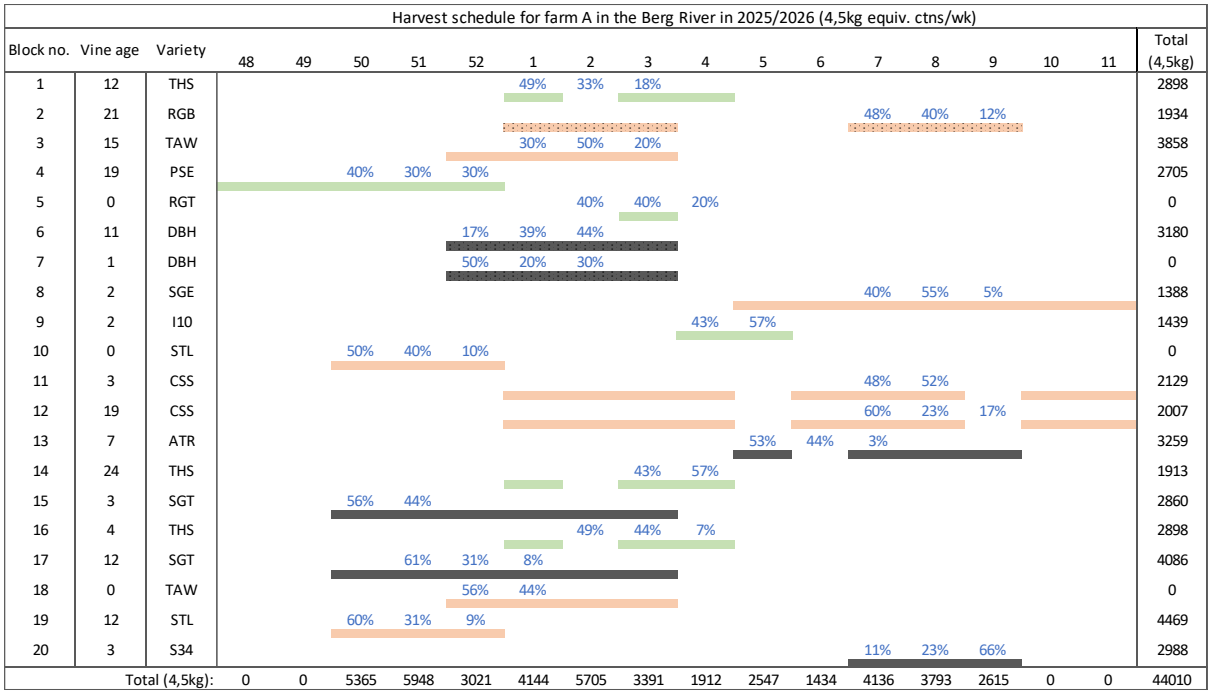
Figure 4.37: Harvest schedule for Farm A in the Berg River for 2024/2025 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2024/2025 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	11	THS						49%	33%	18%									2898
2	20	RGB												48%	40%	12%			1934
3	14	TAW						30%	50%	20%									5144
4	18	PSE			40%	30%	30%												2705
5	20	THS						40%		40%	20%								1913
6	10	DBH					17%	39%	44%										3180
7	0	DBH					50%	20%	30%										0
8	1	SGE												40%	55%	5%			0
9	1	I10									43%	57%							0
10	16	THS						36%	14%	28%	22%								2173
11	2	CSS												48%	52%				912
12	18	CSS												60%	23%	17%			2007
13	6	ATR										53%	44%	3%					3259
14	23	THS								43%	57%								1913
15	2	SGT			56%	44%													1226
16	3	THS							49%	44%	7%								2028
17	11	SGT				61%	31%	8%											4086
18	10	RGT								56%	44%								4955
19	11	STL			60%	31%	9%												4469
20	2	S34												11%	23%	66%			1281
		Total (4,5kg):	0	0	4450	5229	3021	6078	6226	7414	4273	1727	1434	2809	2004	1419	0	0	46083

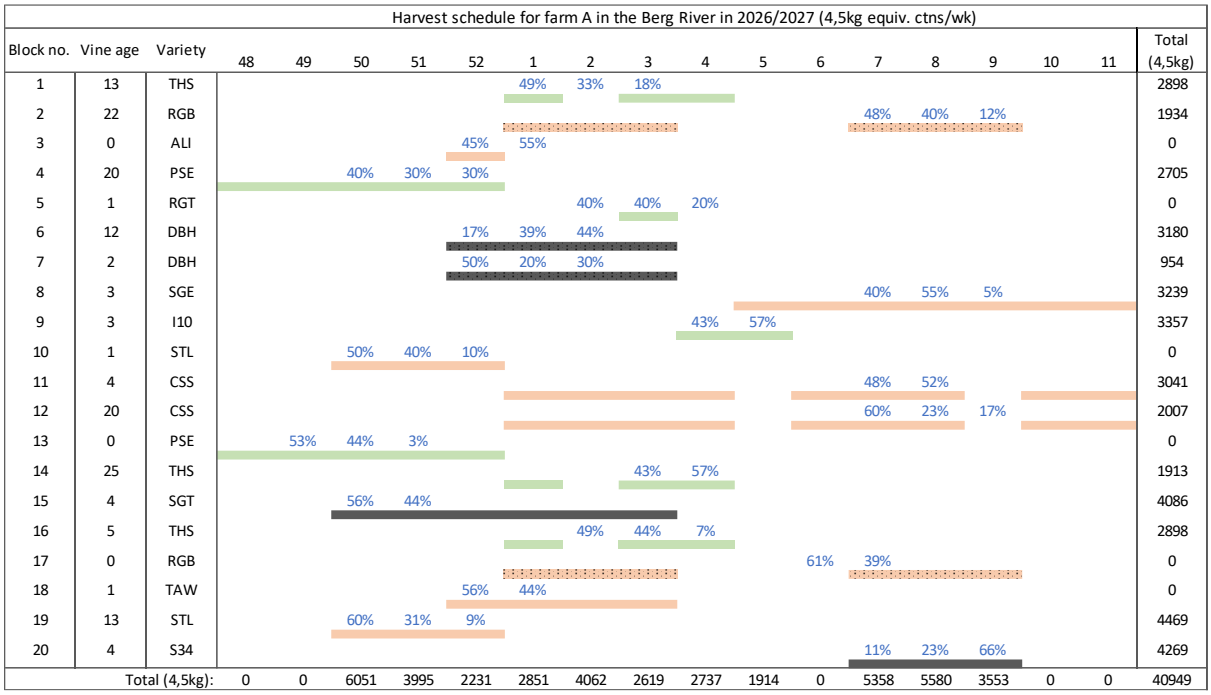
Figure 4.38: Harvest schedule for Farm A in the Berg River for 2025/2026 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2025/2026 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	12	THS						49%	33%	18%									2898
2	21	RGB												48%	40%	12%			1934
3	15	TAW						30%	50%	20%									3858
4	19	PSE			40%	30%	30%												2705
5	0	RGT							40%	40%	20%								0
6	11	DBH					17%	39%	44%										3180
7	1	DBH					50%	20%	30%										0
8	2	SGE												40%	55%	5%			1388
9	2	I10									43%	57%							1439
10	0	STL			50%	40%	10%												0
11	3	CSS												48%	52%				2129
12	19	CSS												60%	23%	17%			2007
13	7	ATR										53%	44%	3%					3259
14	24	THS								43%	57%								1913
15	3	SGT			56%	44%													2860
16	4	THS							49%	44%	7%								2898
17	12	SGT				61%	31%	8%											4086
18	0	TAW					56%	44%											0
19	12	STL			60%	31%	9%												4469
20	3	S34												11%	23%	66%			2988
		Total (4,5kg):	0	0	5365	5948	3021	4144	5705	3391	1912	2547	1434	4136	3793	2615	0	0	44010

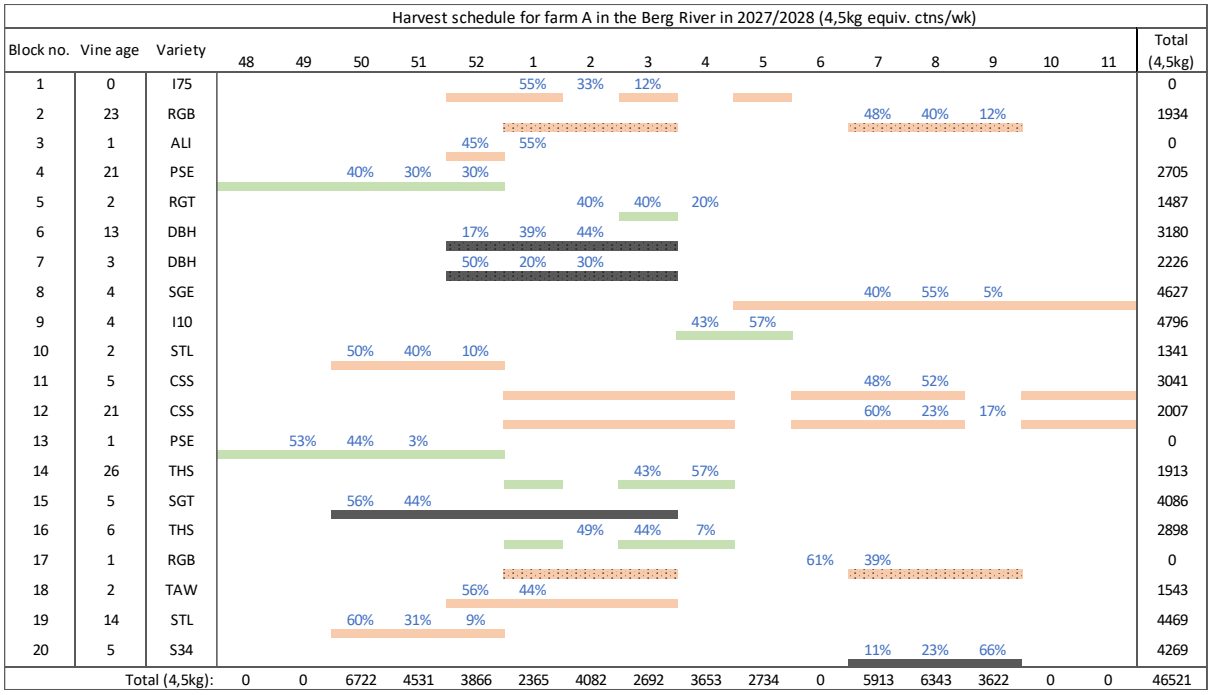
Figure 4.39: Harvest schedule for Farm A in the Berg River for 2026/2027 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2026/2027 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	13	THS						49%	33%	18%									2898
2	22	RGB												48%	40%	12%			1934
3	0	ALI					45%	55%											0
4	20	PSE			40%	30%	30%												2705
5	1	RGT							40%	40%	20%								0
6	12	DBH					17%	39%	44%										3180
7	2	DBH					50%	20%	30%										954
8	3	SGE												40%	55%	5%			3239
9	3	I10									43%	57%							3357
10	1	STL			50%	40%	10%												0
11	4	CSS												48%	52%				3041
12	20	CSS												60%	23%	17%			2007
13	0	PSE		53%	44%	3%													0
14	25	THS								43%	57%								1913
15	4	SGT			56%	44%													4086
16	5	THS							49%	44%	7%								2898
17	0	RGB											61%	39%					0
18	1	TAW					56%	44%											0
19	13	STL			60%	31%	9%												4469
20	4	S34												11%	23%	66%			4269
		Total (4,5kg):	0	0	6051	3995	2231	2851	4062	2619	2737	1914	0	5358	5580	3553	0	0	40949

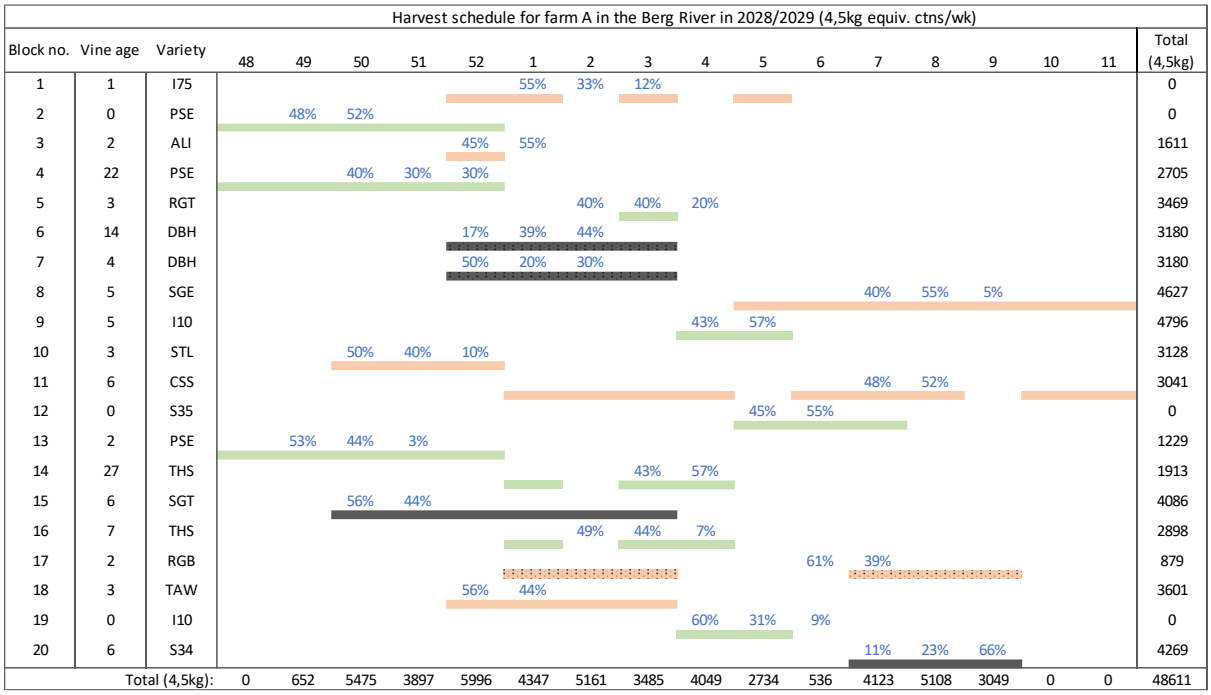
Figure 4.40: Harvest schedule for Farm A in the Berg River for 2027/2028 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2027/2028 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	0	I75						55%	33%	12%									0
2	23	RGB												48%	40%	12%			1934
3	1	ALI					45%	55%											0
4	21	PSE			40%	30%	30%												2705
5	2	RGT							40%	40%	20%								1487
6	13	DBH					17%	39%	44%										3180
7	3	DBH					50%	20%	30%										2226
8	4	SGE												40%	55%	5%			4627
9	4	I10									43%	57%							4796
10	2	STL			50%	40%	10%												1341
11	5	CSS												48%	52%				3041
12	21	CSS												60%	23%	17%			2007
13	1	PSE		53%	44%	3%													0
14	26	THS								43%	57%								1913
15	5	SGT			56%	44%													4086
16	6	THS							49%	44%	7%								2898
17	1	RGB											61%	39%					0
18	2	TAW					56%	44%											1543
19	14	STL			60%	31%	9%												4469
20	5	S34												11%	23%	66%			4269
		Total (4,5kg):	0	0	6722	4531	3866	2365	4082	2692	3653	2734	0	5913	6343	3622	0	0	46521

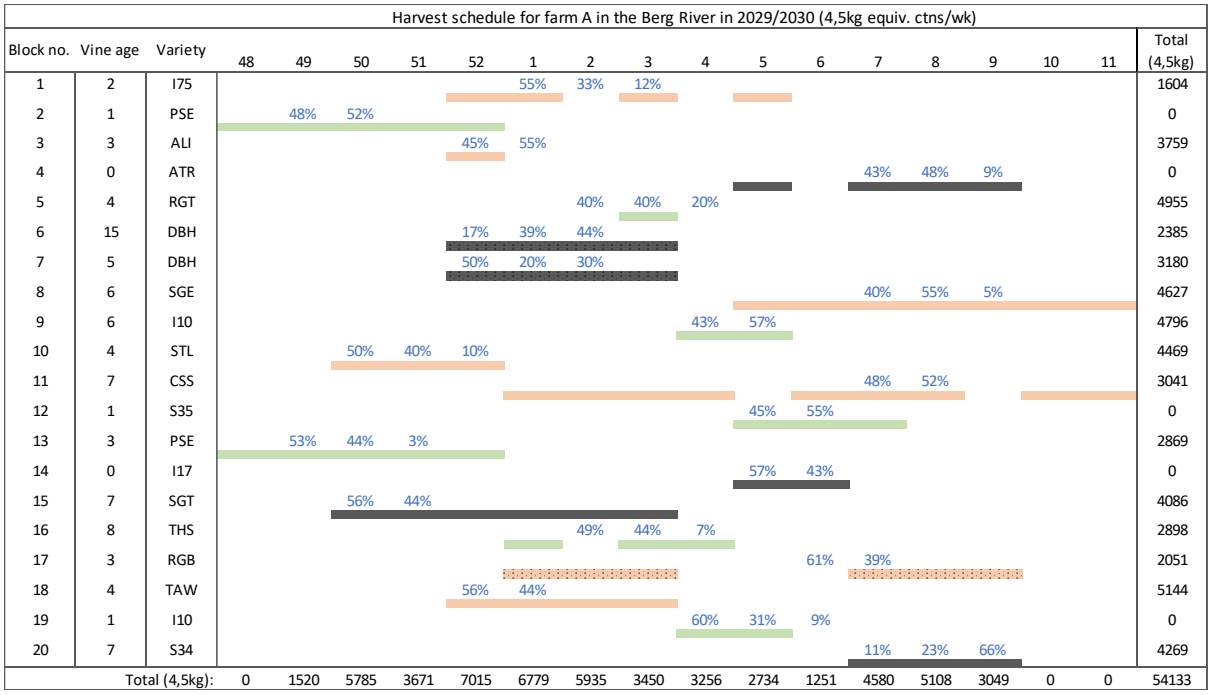
Figure 4.41: Harvest schedule for Farm A in the Berg River for 2028/2029 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2028/2029 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	1	I75						55%	33%	12%									0
2	0	PSE		48%	52%														0
3	2	ALI					45%	55%											1611
4	22	PSE			40%	30%	30%												2705
5	3	RGT							40%	40%	20%								3469
6	14	DBH					17%	39%	44%										3180
7	4	DBH					50%	20%	30%										3180
8	5	SGE												40%	55%	5%			4627
9	5	I10									43%	57%							4796
10	3	STL			50%	40%	10%												3128
11	6	CSS												48%	52%				3041
12	0	S35										45%	55%						0
13	2	PSE		53%	44%	3%													1229
14	27	THS								43%	57%								1913
15	6	SGT			56%	44%													4086
16	7	THS							49%	44%	7%								2898
17	2	RGB											61%	39%					879
18	3	TAW					56%	44%											3601
19	0	I10									60%	31%	9%						0
20	6	S34												11%	23%	66%			4269
		Total (4,5kg):	0	652	5475	3897	5996	4347	5161	3485	4049	2734	536	4123	5108	3049	0	0	48611

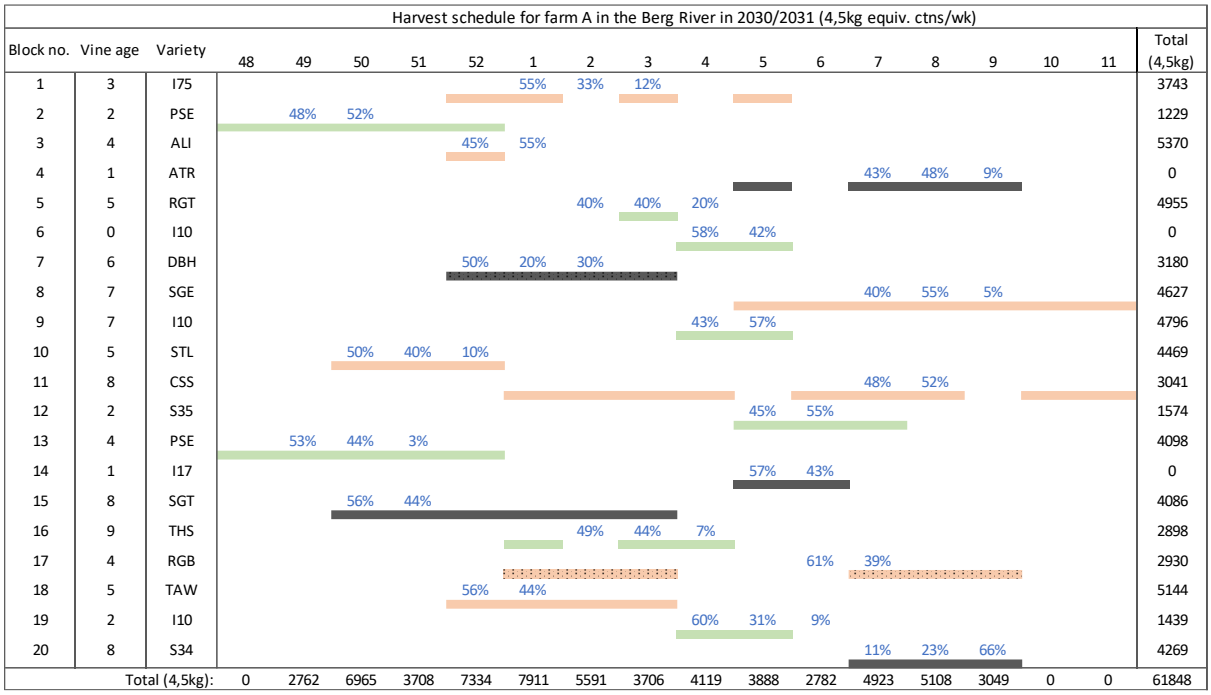
Figure 4.42: Harvest schedule for Farm A in the Berg River for 2029/2030 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2029/2030 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	2	I75						55%	33%	12%									1604
2	1	PSE		48%	52%														0
3	3	ALI					45%	55%											3759
4	0	ATR												43%	48%	9%			0
5	4	RGT							40%	40%	20%								4955
6	15	DBH					17%	39%	44%										2385
7	5	DBH					50%	20%	30%										3180
8	6	SGE												40%	55%	5%			4627
9	6	I10									43%	57%							4796
10	4	STL			50%	40%	10%												4469
11	7	CSS												48%	52%				3041
12	1	S35										45%	55%						0
13	3	PSE		53%	44%	3%													2869
14	0	I17										57%	43%						0
15	7	SGT			56%	44%													4086
16	8	THS							49%	44%	7%								2898
17	3	RGB											61%	39%					2051
18	4	TAW					56%	44%											5144
19	1	I10									60%	31%	9%						0
20	7	S34												11%	23%	66%			4269
		Total (4,5kg):	0	1520	5785	3671	7015	6779	5935	3450	3256	2734	1251	4580	5108	3049	0	0	54133

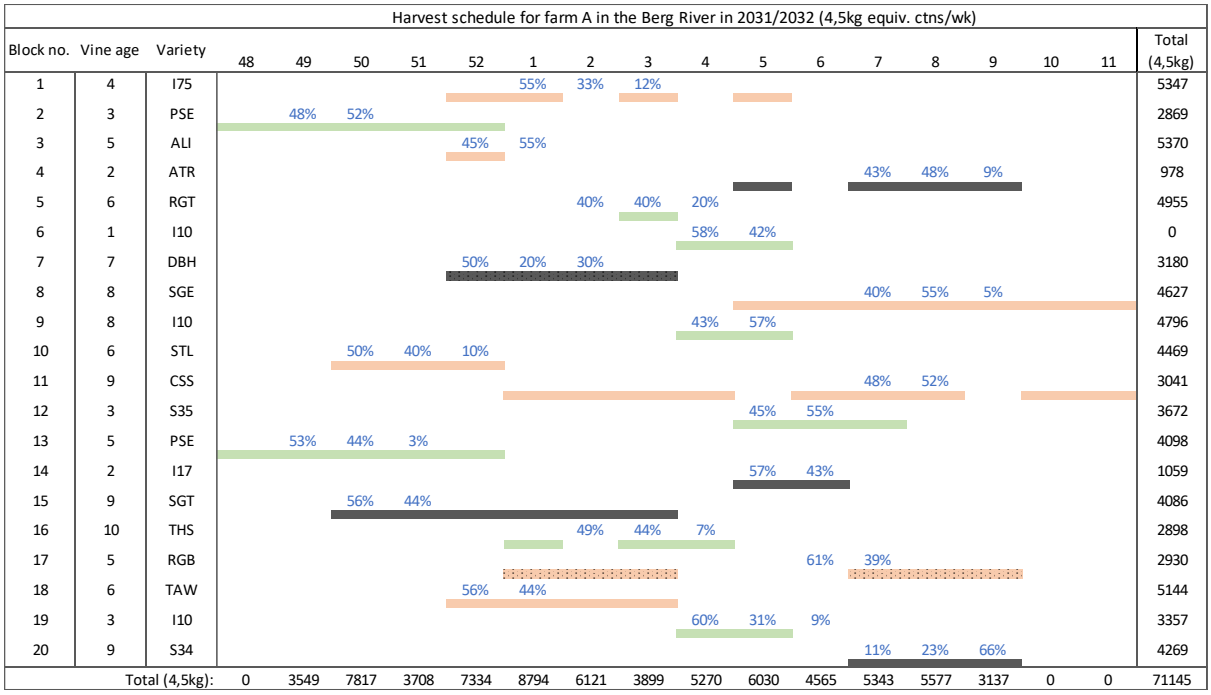
Figure 4.43: Harvest schedule for Farm A in the Berg River for 2030/2031 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2030/2031 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	3	I75						55%	33%	12%									3743
2	2	PSE		48%	52%														1229
3	4	ALI					45%	55%											5370
4	1	ATR												43%	48%	9%			0
5	5	RGT							40%	40%	20%								4955
6	0	I10									58%	42%							0
7	6	DBH					50%	20%	30%										3180
8	7	SGE												40%	55%	5%			4627
9	7	I10									43%	57%							4796
10	5	STL			50%	40%	10%												4469
11	8	CSS												48%	52%				3041
12	2	S35										45%	55%						1574
13	4	PSE		53%	44%	3%													4098
14	1	I17										57%	43%						0
15	8	SGT			56%	44%													4086
16	9	THS							49%	44%	7%								2898
17	4	RGB											61%	39%					2930
18	5	TAW					56%	44%											5144
19	2	I10									60%	31%	9%						1439
20	8	S34												11%	23%	66%			4269
		Total (4,5kg):	0	2762	6965	3708	7334	7911	5591	3706	4119	3888	2782	4923	5108	3049	0	0	61848

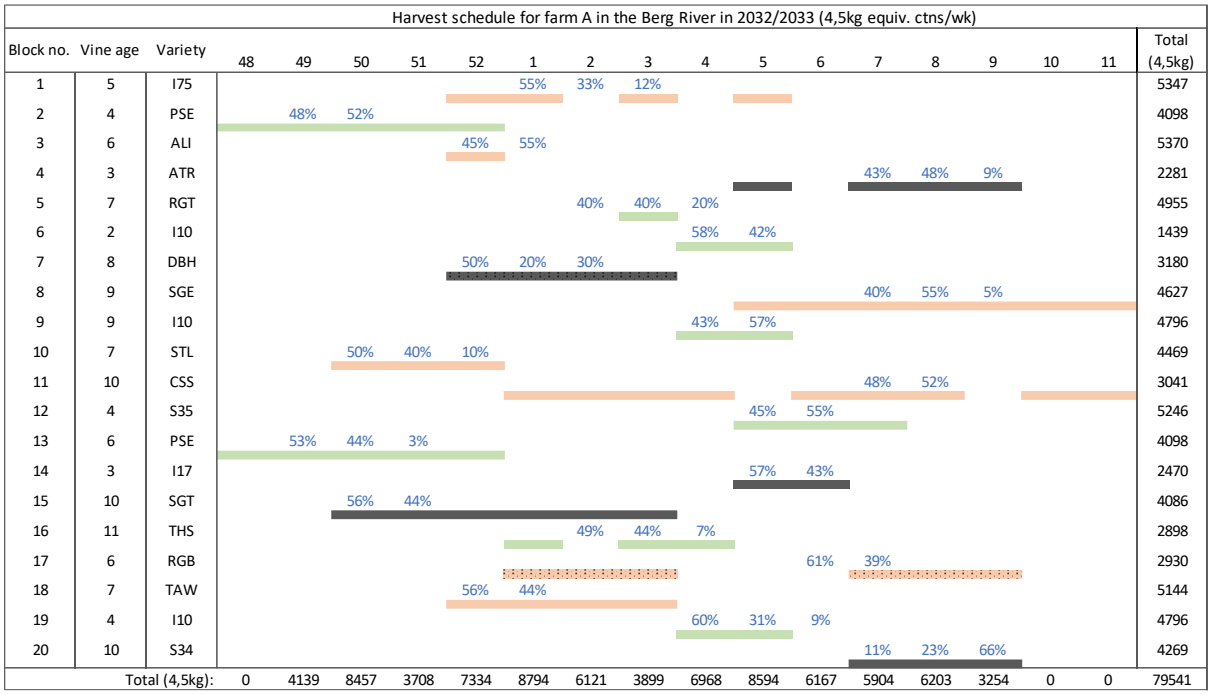
Figure 4.44: Harvest schedule for Farm A in the Berg River for 2031/2032 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2031/2032 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	4	I75						55%	33%	12%									5347
2	3	PSE		48%	52%														2869
3	5	ALI					45%	55%											5370
4	2	ATR												43%	48%	9%			978
5	6	RGT							40%	40%	20%								4955
6	1	I10									58%	42%							0
7	7	DBH					50%	20%	30%										3180
8	8	SGE												40%	55%	5%			4627
9	8	I10									43%	57%							4796
10	6	STL			50%	40%	10%												4469
11	9	CSS												48%	52%				3041
12	3	S35										45%	55%						3672
13	5	PSE		53%	44%	3%													4098
14	2	I17										57%	43%						1059
15	9	SGT			56%	44%													4086
16	10	THS							49%	44%	7%								2898
17	5	RGB											61%	39%					2930
18	6	TAW					56%	44%											5144
19	3	I10									60%	31%	9%						3357
20	9	S34												11%	23%	66%			4269
		Total (4,5kg):	0	3549	7817	3708	7334	8794	6121	3899	5270	6030	4565	5343	5577	3137	0	0	71145

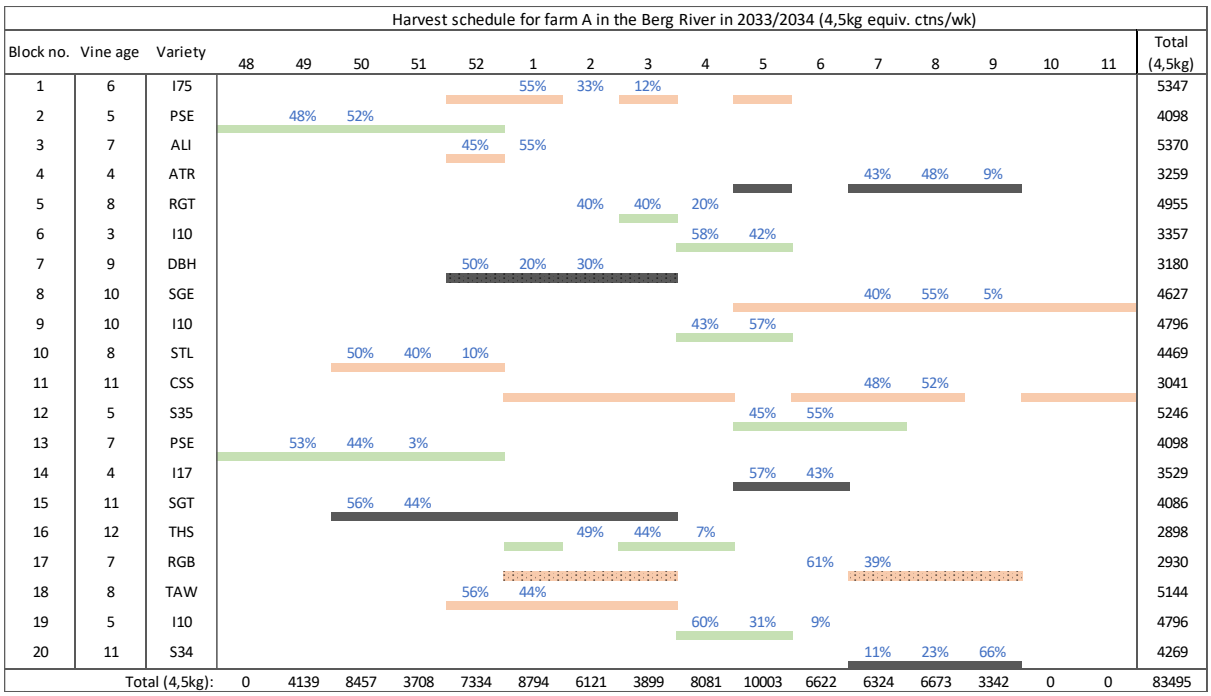
Figure 4.45: Harvest schedule for Farm A in the Berg River for 2032/2033 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2032/2033 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	5	I75						55%	33%	12%									5347
2	4	PSE		48%	52%														4098
3	6	ALI					45%	55%											5370
4	3	ATR												43%	48%	9%			2281
5	7	RGT							40%	40%	20%								4955
6	2	I10									58%	42%							1439
7	8	DBH					50%	20%	30%										3180
8	9	SGE												40%	55%	5%			4627
9	9	I10									43%	57%							4796
10	7	STL			50%	40%	10%												4469
11	10	CSS												48%	52%				3041
12	4	S35										45%	55%						5246
13	6	PSE		53%	44%	3%													4098
14	3	I17										57%	43%						2470
15	10	SGT			56%	44%													4086
16	11	THS							49%	44%	7%								2898
17	6	RGB											61%	39%					2930
18	7	TAW					56%	44%											5144
19	4	I10									60%	31%	9%						4796
20	10	S34												11%	23%	66%			4269
		Total (4,5kg):	0	4139	8457	3708	7334	8794	6121	3899	6968	8594	6167	5904	6203	3254	0	0	79541

Figure 4.46: Harvest schedule for Farm A in the Berg River for 2033/2034 (4,5kg equiv. cartons/week)



Harvest schedule for farm A in the Berg River in 2033/2034 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	6	I75						55%	33%	12%									5347
2	5	PSE		48%	52%														4098
3	7	ALI					45%	55%											5370
4	4	ATR												43%	48%	9%			3259
5	8	RGT							40%	40%	20%								4955
6	3	I10									58%	42%							3357
7	9	DBH					50%	20%	30%										3180
8	10	SGE												40%	55%	5%			4627
9	10	I10									43%	57%							4796
10	8	STL			50%	40%	10%												4469
11	11	CSS												48%	52%				3041
12	5	S35										45%	55%						5246
13	7	PSE		53%	44%	3%													4098
14	4	I17										57%	43%						3529
15	11	SGT			56%	44%													4086
16	12	THS							49%	44%	7%								2898
17	7	RGB											61%	39%					2930
18	8	TAW					56%	44%											5144
19	5	I10									60%	31%	9%						4796
20	11	S34												11%	23%	66%			4269
		Total (4,5kg):	0	4139	8457	3708	7334	8794	6121	3899	8081	10003	6622	6324	6673	3342	0	0	83495

Figure 4.47: Harvest schedule for Farm A in the Berg River for 2034/2035 (4,5kg equiv. cartons/week)

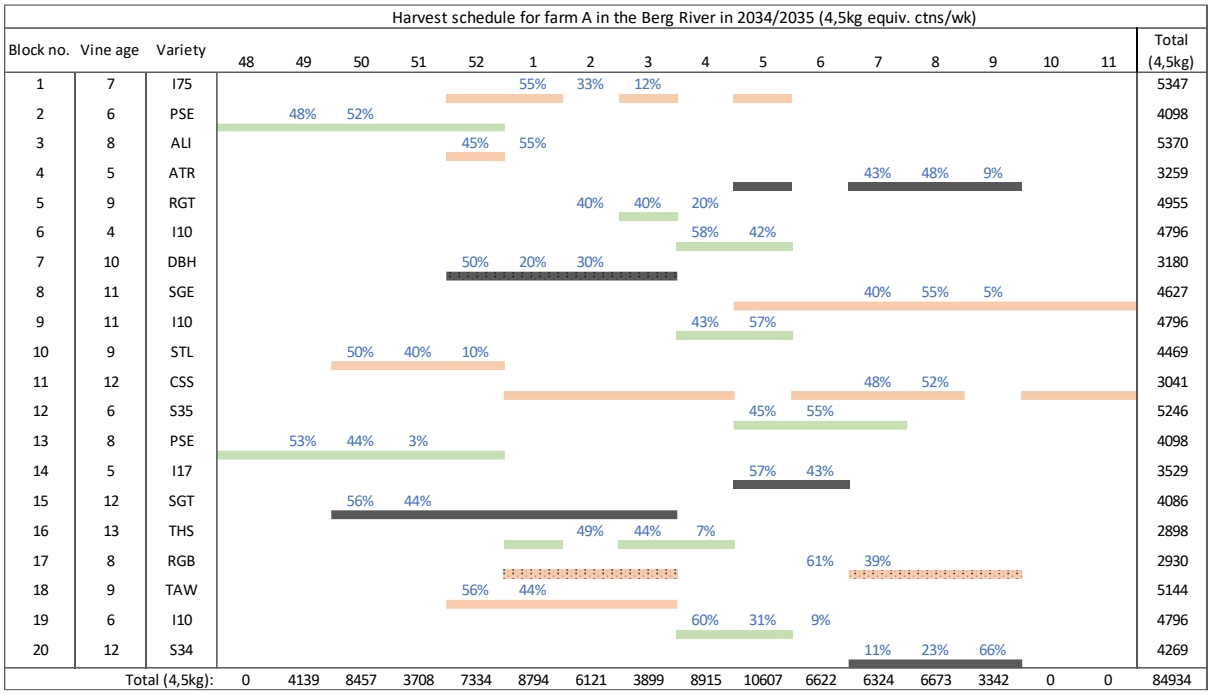


Table 4.65: Unequal block size for weekly harvest chart Farm A

Block no.	Block size	Variety	Harvest/ ha	Proportion of total yield (%)	Harvest/ block	Proportion of total yield (%)
1	1,4	THS	2 898	4%	4 057	3%
2	3	RGB	2 930	4%	8 790	6%
3	2	TAW	5 144	7%	10 288	7%
4	1,9	PSE	4 098	6%	7 786	5%
5	1,6	THS	2 898	4%	4 637	3%
6	3,2	DBH	3 180	4%	10 176	7%
7	1,7	RGT	4 955	7%	8 424	5%
8	3,2	CSS	3 041	4%	9 731	6%
9	1,8	ATR	3 259	4%	5 866	4%
10	1,2	ATR	3 259	4%	3 911	3%
11	2,2	RGB	2 930	4%	6 446	4%
12	1,8	CSS	3 041	4%	5 474	4%
13	1,4	ATR	3 259	4%	4 563	3%
14	2,1	RGT	4 955	7%	10 406	7%
15	3	DBH	3 180	4%	9 540	6%
16	3,4	PSE	4 098	6%	13 933	9%
17	1,3	SGT	4 086	6%	5 312	3%
18	1,2	RGT	4 955	7%	5 946	4%
19	2,5	STL	4 469	6%	11 173	7%
20	3	DBH	3 180	4%	9 540	6%
Total	42,9		73 815		155 997	

Table 4.66: Annual harvest per week for Farm A with unequal block sizes

	Weeks:	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total
Year	2020	0	0	12 221	11 338	18 928	16 697	14 234	19 348	8 034	3 248	6 583	8 685	5 881	5 729	730	0	131 656
	2021	0	0	9 039	8 455	11 261	16 220	13 661	19 348	8 034	4 215	4 749	7 128	7 853	5 849	642	0	116 455
	2022	0	0	9 039	8 455	7 253	13 572	9 749	12 884	7 951	4 941	5 352	5 385	5 834	4 606	642	0	95 665
	2023	0	0	9 039	8 455	7 253	13 259	11 076	13 942	7 966	2 418	2 008	5 385	3 265	1 394	0	0	85 462
	2024	0	0	10 818	9 863	5 924	11 631	14 705	12 834	6 574	2 418	2 008	6 476	5 079	3 846	0	0	92 176
	2025	0	0	13 564	12 021	5 924	8 697	14 502	8 336	4 093	3 894	2 008	10 101	10 092	7 449	0	0	100 679
	2026	0	0	15 623	10 398	5 088	6 281	11 131	6 792	5 577	3 444	0	13 719	15 277	10 281	0	0	103 613
	2027	0	0	16 428	11 042	7 367	5 541	11 392	7 014	7 167	4 921	0	15 496	17 720	10 503	0	0	114 589
	2028	0	912	11 554	8 488	10 220	8 723	13 147	8 282	7 801	4 921	697	10 989	14 568	9 193	0	0	109 495
	2029	0	2 128	11 313	7 659	11 377	12 144	13 720	7 776	5 987	4 921	1 627	11 583	14 568	9 193	0	0	113 995
	2030	0	4 811	13 988	7 711	11 529	12 586	11 350	8 135	8 146	7 310	4 205	12 028	14 568	9 193	0	0	125 561
	2031	0	7 171	16 545	7 711	11 529	13 821	12 091	8 405	11 023	11 764	7 671	12 827	15 460	9 360	0	0	145 379
	2032	0	8 942	18 463	7 711	11 529	13 821	12 091	8 405	15 852	17 778	10 827	13 892	16 649	9 583	0	0	165 542
	2033	0	8 942	18 463	7 711	11 529	13 821	12 091	8 405	19 412	21 623	11 783	14 691	17 541	9 750	0	0	175 762
	2034	0	8 942	18 463	7 711	11 529	13 821	12 091	8 405	22 082	23 557	11 783	14 691	17 541	9 750	0	0	180 366

7.6 Annexure F: Simulation of Farm B from 2020 to 2034

Table 4.67: Table grape variety portfolio for Farm B

Table grape variety portfolio for farm B																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	THS	THS	THS	THS	THS	THS	THS	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
2	1	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	I10	I10	I10	I10	I10	I10	I10
3	1	TAW	TAW	TAW	TAW	TAW	TAW	I75	I75	I75	I75	I75	I75	I75	I75	I75
4	1	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	S34	S34	S34	S34	S34	S34
5	1	THS	THS	THS	THS	THS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS
6	1	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	RGT	RGT	RGT	RGT	RGT
7	1	RGT	RGT	RGT	RGT	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
8	1	CSS	CSS	CSS	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
9	1	ATR	ATR	ATR	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17
10	1	THS	THS	THS	THS	THS	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35
11	1	RGB	RGB	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE
12	1	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	THS	THS	THS	THS	THS	THS	THS
13	1	ATR	ATR	ATR	ATR	ATR	ATR	S35	S35	S35	S35	S35	S35	S35	S35	S35
14	1	THS	THS	THS	THS	THS	THS	THS	THS	THS	I10	I10	I10	I10	I10	I10
15	1	DBH	DBH	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE
16	1	PSE	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35
17	1	SGT	SGT	SGT	SGT	SGT	SGT	THS	THS	THS	THS	THS	THS	THS	THS	THS
18	1	RGT	RGT	RGT	RGT	RGT	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17
19	1	STL	STL	STL	STL	STL	STL	STL	STL	SGT	SGT	SGT	SGT	SGT	SGT	SGT
20	1	DBH	DBH	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW

Table 4.68: Yield percentage based on vine age for Farm B

Yield percentage based on vine age for farm B																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	100%	100%	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%
2	1	75%	75%	66%	66%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%
3	1	100%	100%	100%	100%	100%	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%
4	1	100%	75%	75%	75%	66%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%
5	1	75%	75%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%
6	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	0%	0%	30%	70%	100%
7	1	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%
8	1	75%	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%
9	1	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%
10	1	100%	100%	100%	75%	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%
11	1	66%	66%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%
12	1	100%	75%	75%	75%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%	100%
13	1	30%	70%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%
14	1	66%	66%	66%	66%	66%	66%	66%	66%	66%	0%	0%	30%	70%	100%	100%
15	1	100%	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%
16	1	75%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
17	1	100%	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%
18	1	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%
19	1	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	30%	70%	100%	100%	100%
20	1	100%	100%	0%	0%	30%	70%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4.69: Actual yield percentage of mathematical yield potential for Farm B

Actual yield percentage of mathematical potential for farm B																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	38%	38%	38%	38%	38%	38%	38%	64%	64%	64%	64%	64%	64%	64%	64%
2	1	33%	33%	33%	33%	33%	33%	33%	33%	55%	55%	55%	55%	55%	55%	55%
3	1	65%	65%	65%	65%	65%	65%	59%	59%	59%	59%	59%	59%	59%	59%	59%
4	1	56%	56%	56%	56%	56%	56%	56%	56%	56%	40%	40%	40%	40%	40%	40%
5	1	38%	38%	38%	38%	38%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
6	1	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	68%	68%	68%	68%	68%
7	1	68%	68%	68%	68%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
8	1	39%	39%	39%	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%
9	1	36%	36%	36%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
10	1	38%	38%	38%	38%	38%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
11	1	33%	33%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%
12	1	39%	39%	39%	39%	39%	39%	39%	39%	38%	38%	38%	38%	38%	38%	38%
13	1	36%	36%	36%	36%	36%	36%	60%	60%	60%	60%	60%	60%	60%	60%	60%
14	1	38%	38%	38%	38%	38%	38%	38%	38%	38%	55%	55%	55%	55%	55%	55%
15	1	51%	51%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
16	1	56%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
17	1	44%	44%	44%	44%	44%	44%	38%	38%	38%	38%	38%	38%	38%	38%	38%
18	1	68%	68%	68%	68%	68%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
19	1	58%	58%	58%	58%	58%	58%	58%	58%	44%	44%	44%	44%	44%	44%	44%
20	1	51%	51%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%

Table 4.70: Annual yield per block for Farm B (4,5kg equiv. cartons)

Annual yield per block for farm B (4,5kg/block)																
Block no.	Block size (ha)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	1	2898	2898	2898	2898	2898	2898	2898	0	0	1611	3759	5370	5370	5370	5370
2	1	2198	2198	1934	1934	1934	1934	1934	1934	0	0	1439	3357	4796	4796	4796
3	1	5144	5144	5144	5144	5144	3858	0	0	1604	3743	5347	5347	5347	5347	5347
4	1	4098	3073	3073	3073	2705	2705	2705	2705	2705	0	0	1281	2988	4269	4269
5	1	2173	2173	1913	1913	1913	0	0	912	2129	3041	3041	3041	3041	3041	3041
6	1	3180	3180	3180	3180	3180	3180	3180	3180	3180	2385	0	0	1487	3469	4955
7	1	3270	3270	3270	3270	0	0	879	2051	2930	2930	2930	2930	2930	2930	2930
8	1	2281	2007	2007	0	0	1611	3759	5370	5370	5370	5370	5370	5370	5370	5370
9	1	3259	3259	3259	0	0	1059	2470	3529	3529	3529	3529	3529	3529	3529	3529
10	1	2898	2898	2898	2173	2173	0	0	1574	3672	5246	5246	5246	5246	5246	5246
11	1	1934	1934	0	0	1388	3239	4627	4627	4627	4627	4627	4627	4627	4627	4627
12	1	3041	2281	2281	2281	2007	2007	2007	2007	0	0	869	2028	2898	2898	2898
13	1	978	2281	3259	3259	3259	3259	0	0	1574	3672	5246	5246	5246	5246	5246
14	1	1913	1913	1913	1913	1913	1913	1913	1913	1913	0	0	1439	3357	4796	4796
15	1	3180	2385	0	0	1229	2869	4098	4098	4098	4098	4098	4098	4098	4098	4098
16	1	3073	0	0	1574	3672	5246	5246	5246	5246	5246	5246	5246	5246	5246	5246
17	1	4086	4086	4086	4086	4086	4086	0	0	869	2028	2898	2898	2898	2898	2898
18	1	4955	4955	4955	4955	4955	0	0	1059	2470	3529	3529	3529	3529	3529	3529
19	1	4469	4469	4469	4469	4469	4469	4469	4469	0	0	1226	2860	4086	4086	4086
20	1	3180	3180	0	0	1543	3601	5144	5144	5144	5144	5144	5144	5144	5144	5144

Table 4.71: Summary of enterprise budgets for Farm B from year 2020 to 2034 (block 1 to 4)

Enterprise budget for block 1 from year 2020 to 2034							IRR: 62%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	THS	THS	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
Yield (4,5kg/block)	2898	2898	2898	2898	2898	2898	2898	0	0	1611	3759	5370	5370	5370	5370
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R223,85	R223,85	R223,85	R223,85	R223,85	R223,85	R223,85	R223,85
Income	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	-	-	R360 610,12	R841 423,62	R1 202 033,74	R1 202 033,74	R1 202 033,74	R1 202 033,74
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04
Royalties	-	-	-	-	-	-	-	-	-	R23 475,50	R54 776,17	R78 251,67	R78 251,67	R78 251,67	R78 251,67
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R393 867,71	R425 168,38	R448 643,88	R448 643,88	R448 643,88	R448 643,88
Establishment cost	-	-	-	-	-	-	-	R179 726,80	R42 436,12	R47 528,46	R53 231,87	R59 619,69	R66 774,06	-	-
EBITDA	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	-R406 116,80	-R268 826,12	-R80 786,05	R363 023,36	R693 770,16	R686 615,80	R753 389,86	R753 389,86

Enterprise budget for block 2 from year 2020 to 2034							IRR: 15%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	I10	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	2198	2198	1934	1934	1934	1934	1934	1934	0	0	1439	3357	4796	4796	4796
PIB (R/4,5kg)	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R246 019,11	R246 019,11	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93	R741 491,93
Infield labour	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95
EBITDA	-R110 309,03	-R110 309,03	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R406 116,80	-R230 131,58	-R146 335,27	R130 668,13	R338 234,61	R337 603,82	R336 897,32

Enterprise budget for block 3 from year 2020 to 2034							IRR: 74%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	TAW	TAW	TAW	TAW	TAW	TAW	I75	I75	I75	I75	I75	I75	I75	I75	I75
Yield (4,5kg/block)	5144	5144	5144	5144	5144	3858	0	0	1604	3743	5347	5347	5347	5347	5347
PIB (R/4,5kg)	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25
Income	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R391 895,24	-	-	R266 684,59	R622 264,04	R888 948,63	R888 948,63	R888 948,63	R888 948,63	R888 948,63
Infield labour	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	-	-	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58
Chemical cost	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	-	-	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40
Royalties	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R37 534,44	-	-	R21 967,59	R51 257,71	R73 225,31	R73 225,31	R73 225,31	R73 225,31	R73 225,31
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R404 210,83	R226 390,00	R226 390,00	R373 044,57	R402 334,70	R424 302,29	R424 302,29	R424 302,29	R424 302,29	R424 302,29
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95	R7 385,22	R8 271,45
EBITDA	R105 804,68	R105 804,68	R105 804,68	R105 804,68	R105 804,68	-R12 315,59	-R406 116,80	-R230 131,58	-R110 550,56	R215 235,90	R459 389,68	R458 758,89	R458 052,39	R457 261,12	R456 374,89

Enterprise budget for block 4 from year 2020 to 2034							IRR: 98%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	S34	S34	S34	S34	S34	S34
Yield (4,5kg/block)	4098	3073	3073	3073	2705	2705	2705	2705	2705	0	0	1281	2988	4269	4269
PIB (R/4,5kg)	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R648 461,52	R486 346,14	R486 346,14	R486 346,14	R427 984,60	R427 984,60	R427 984,60	R427 984,60	R427 984,60	-	-	R131 049,21	R305 781,49	R436 830,70	R436 830,70
Infield labour	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	-	-	R18 470,44	R18 470,44	R18 470,44	R18 470,44
Chemical cost	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	-	-	R770,50	R770,50	R770,50	R770,50
Royalties	R39 660,08	R29 745,06	R29 745,06	R29 745,06	R26 175,65	R26 175,65	R26 175,65	R26 175,65	R26 175,65	-	-	R7 511,03	R17 525,73	R25 036,76	R25 036,76
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R404 227,55	R394 312,53	R394 312,53	R394 312,53	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R226 390,00	R226 390,00	R364 393,96	R374 408,67	R381 919,70	R381 919,70
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	R244 233,97	R92 033,61	R92 033,61	R92 033,61	R37 241,48	R37 241,48	R37 241,48	R37 241,48	R37 241,48	-R406 116,80	-R230 131,58	-R276 229,87	-R116 658,51	R1 115,92	-R5 339,49

Table 4.72: Summary of enterprise budgets for Farm B from year 2020 to 2034 (block 5 to 8)

Enterprise budget for block 5 from year 2020 to 2034							IRR: -100%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	THS	THS	THS	THS	THS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	
Yield (4,5kg/block)	2173	2173	1913	1913	1913	0	0	912	2129	3041	3041	3041	3041	3041	3041	
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	
Income	R281 018,38	R281 018,38	R247 296,17	R247 296,17	R247 296,17	-	-	R101 165,92	R236 053,81	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
EBITDA	-R88 198,02	-R88 198,02	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R303 515,43	-R173 773,75	-R78 371,59	-R84 827,00	-R92 057,06	-R24 576,51	-R24 576,51	-R24 576,51	

Enterprise budget for block 6 from year 2020 to 2034							IRR: 1%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	RGT	RGT	RGT	RGT	RGT	
Yield (4,5kg/block)	3180	3180	3180	3180	3180	3180	3180	3180	3180	2385	0	0	1487	3469	4955	
PIB (R/4,5kg)	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R113,75	R113,75	R113,75	R113,75	R113,75	
Income	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R226 541,19	-	-	R169 095,57	R394 556,32	R563 651,89	
Infield labour	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	-	-	R34 073,86	R34 073,86	R34 073,86	
Chemical cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R371 715,86	R371 715,86	R371 715,86	
Establishment cost	-	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	
EBITDA	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R129 712,61	-R406 116,80	-R230 131,58	-R245 505,41	-R25 190,87	R138 140,94	

Enterprise budget for block 7 from year 2020 to 2034							IRR: 2%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	RGT	RGT	RGT	RGT	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	
Yield (4,5kg/block)	3270	3270	3270	3270	0	0	879	2051	2930	2930	2930	2930	2930	2930	2930	
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	
Income	R372 010,25	R372 010,25	R372 010,25	R372 010,25	-	-	R92 395,06	R215 588,48	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54	
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	
Chemical cost	-	-	-	-	-	-	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	
Establishment cost	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	
EBITDA	R294,38	R294,38	R294,38	R294,38	-R406 116,80	-R230 131,58	-R306 818,19	-R188 770,98	-R102 139,68	-R108 595,09	-R115 825,15	-R48 344,60	-R48 344,60	-R48 344,60	-R48 344,60	

Enterprise budget for block 8 from year 2020 to 2034							IRR: 41%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	CSS	CSS	CSS	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	
Yield (4,5kg/block)	2281	2007	2007	0	0	1611	3759	5370	5370	5370	5370	5370	5370	5370	5370	
PIB (R/4,5kg)	R127,84	R127,84	R127,84	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	
Income	R291 600,18	R256 608,16	R256 608,16	-	-	R359 707,99	R839 318,65	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	
Infield labour	R22 191,64	R22 191,64	R22 191,64	-	-	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	
Chemical cost	R1 962,60	R1 962,60	R1 962,60	-	-	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	
Royalties	-	-	-	-	-	R22 374,42	R52 206,98	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R392 766,63	R422 599,19	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	
EBITDA	-R70 196,06	-R105 188,08	-R105 188,08	-R406 116,80	-R230 131,58	-R75 943,75	R368 688,13	R700 257,94	R693 802,53	R686 572,48	R754 053,03	R754 053,03	R754 053,03	R754 053,03	R754 053,03	

Table 4.73: Summary of enterprise budgets for Farm B from year 2020 to 2034 (block 9 to 12)

Enterprise budget for block 9 from year 2020 to 2034							IRR: 45%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	ATR	ATR	ATR	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	
Yield (4,5kg/block)	3259	3259	3259	0	0	1059	2470	3529	3529	3529	3529	3529	3529	3529	3529	
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	
Income	R440 506,98	R440 506,98	R440 506,98	-	-	R108 337,97	R252 788,61	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	
Infield labour	R16 957,03	R16 957,03	R16 957,03	-	-	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	
Chemical cost	R1 297,36	R1 297,36	R1 297,36	-	-	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	
Royalties	-	-	-	-	-	R6 209,34	R14 488,47	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R368 131,53	R376 410,65	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	
EBITDA	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R302 678,66	-R171 653,37	-R75 288,50	-R81 743,91	-R88 973,97	-R21 493,42	-R21 493,42	-R21 493,42	-R21 493,42	-R21 493,42	

Enterprise budget for block 10 from year 2020 to 2034							IRR: 44%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	THS	THS	THS	THS	THS	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	
Yield (4,5kg/block)	2898	2898	2898	2173	2173	0	0	1574	3672	5246	5246	5246	5246	5246	5246	
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	
Income	R374 691,17	R374 691,17	R374 691,17	R281 018,38	R281 018,38	-	-	R264 742,75	R617 733,09	R882 475,84	R882 475,84	R882 475,84	R882 475,84	R882 475,84	R882 475,84	
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	
Royalties	-	-	-	-	-	-	-	R17 218,27	R40 175,97	R57 394,24	R57 394,24	R57 394,24	R57 394,24	R57 394,24	R57 394,24	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R393 230,67	R416 188,37	R433 406,64	R433 406,64	R433 406,64	R433 406,64	R433 406,64	R433 406,64	
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
EBITDA	R5 474,77	R5 474,77	R5 474,77	-R88 198,02	-R88 198,02	-R406 116,80	-R230 131,58	-R171 373,03	R153 513,40	R395 274,12	R388 818,71	R381 588,65	R449 069,20	R449 069,20	R449 069,20	

Enterprise budget for block 11 from year 2020 to 2034							IRR: 13%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	RGB	RGB	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	
Yield (4,5kg/block)	1934	1934	0	0	1388	3239	4627	4627	4627	4627	4627	4627	4627	4627	4627	
PIB (R/4,5kg)	R105,11	R105,11	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	
Income	R203 269,14	R203 269,14	-	-	R142 863,25	R333 347,59	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	
Infield labour	R17 862,54	R17 862,54	-	-	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	
Chemical cost	R823,60	R823,60	-	-	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	
Royalties	-	-	-	-	R10 544,01	R24 602,68	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R361 619,92	R375 678,59	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	
EBITDA	-R153 059,00	-R153 059,00	-R406 116,80	-R230 131,58	-R261 641,77	-R90 362,33	R36 193,16	R29 737,75	R22 507,69	R89 988,24	R89 988,24	R89 988,24	R89 988,24	R89 988,24	R89 988,24	

Enterprise budget for block 12 from year 2020 to 2034							IRR: -100%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	THS	THS	THS	THS	THS	THS	THS	
Yield (4,5kg/block)	3041	2281	2281	2281	2007	2007	2007	2007	0	0	869	2028	2898	2898	2898	
PIB (R/4,5kg)	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	
Income	R328 552,02	R246 414,01	R246 414,01	R246 414,01	R216 844,33	R216 844,33	R216 844,33	R216 844,33	-	-	R112 407,35	R262 283,82	R374 691,17	R374 691,17	R374 691,17	
Infield labour	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	-	-	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	
Chemical cost	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	-	-	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	
EBITDA	-R33 244,23	-R115 382,23	-R115 382,23	-R115 382,23	-R144 951,91	-R144 951,91	-R144 951,91	-R144 951,91	-R406 116,80	-R230 131,58	-R299 694,16	-R154 963,91	-R48 320,31	-R54 775,72	-R62 005,78	

Table 4.74: Summary of enterprise budgets for Farm B from year 2020 to 2034 (block 13 to 16)

Enterprise budget for block 13 from year 2020 to 2034							IRR: 34%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	ATR	ATR	ATR	ATR	ATR	ATR	S35	S35	S35	S35	S35	S35	S35	S35	S35
Yield (4,5kg/block)	978	2281	3259	3259	3259	3259	0	0	1574	3672	5246	5246	5246	5246	5246
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R135,16	R135,16	R135,16	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83
Income	R132 152,09	R308 354,89	R440 506,98	R440 506,98	R440 506,98	R440 506,98	-	-	R232 667,03	R542 889,73	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76
Infield labour	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05
Chemical cost	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35
Royalties	-	-	-	-	-	-	-	-	R15 746,69	R36 742,28	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R391 759,09	R412 754,68	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	-R223 744,30	-R47 541,50	R84 610,59	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R201 977,17	R82 103,73	R293 260,31	R286 804,90	R279 574,84	R347 055,39	R347 055,39

Enterprise budget for block 14 from year 2020 to 2034							IRR: 8%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	THS	THS	THS	THS	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	1913	1913	1913	1913	1913	1913	1913	1913	1913	0	0	1439	3357	4796	4796
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	-	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19	R283 240,78

Enterprise budget for block 15 from year 2020 to 2034							IRR: 36%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE
Yield (4,5kg/block)	3180	2385	0	0	1229	2869	4098	4098	4098	4098	4098	4098	4098	4098	4098
PIB (R/4,5kg)	R129,30	R129,30	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24
Income	R411 199,21	R308 399,40	-	-	R194 538,46	R453 923,06	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52
Infield labour	R18 611,80	R18 611,80	-	-	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03
Chemical cost	-	-	-	-	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44
Royalties	-	-	-	-	R11 898,02	R27 762,05	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R376 465,49	R392 329,52	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	R54 945,41	-R47 854,40	-R406 116,80	-R230 131,58	-R224 812,15	R13 562,21	R190 438,89	R183 983,48	R176 753,42	R244 233,97	R244 233,97	R244 233,97	R244 233,97	R244 233,97	R244 233,97

Enterprise budget for block 16 from year 2020 to 2034							IRR: 39%								Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35
Yield (4,5kg/block)	3073	0	0	1574	3672	5246	5246	5246	5246	5246	5246	5246	5246	5246	5246
PIB (R/4,5kg)	R158,24	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83
Income	R486 346,14	-	-	R232 667,03	R542 889,73	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76
Infield labour	R25 051,03	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05
Chemical cost	R1 874,44	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35
Royalties	R29 745,06	-	-	R15 746,69	R36 742,28	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98
Other direct production cost	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Total production Cost	R394 312,53	R226 390,00	R226 390,00	R391 759,09	R412 754,68	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37
Establishment cost	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	-
EBITDA	R92 033,61	-R406 116,80	-R230 131,58	-R201 977,17	R82 103,73	R293 260,31	R286 804,90	R279 574,84	R347 055,39	R347 055,39	R347 055,39	R347 055,39	R347 055,39	R347 055,39	R347 055,39

Table 4.75:Summary of enterprise budgets for Farm B from year 2020 to 2034 (block 17 to 20)

Enterprise budget for block 17 from year 2020 to 2034							IRR: 62%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	SGT	SGT	SGT	SGT	SGT	SGT	THS	THS	THS	THS	THS	THS	THS	THS	THS	
Yield (4,5kg/block)	4086	4086	4086	4086	4086	4086	0	0	869	2028	2898	2898	2898	2898	2898	
PIB (R/4,5kg)	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	
Income	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	-	-	R112 407,35	R262 283,82	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	
Infield labour	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	-	-	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	
Chemical cost	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	-	-	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	
Royalties	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	-	-	-	-	-	-	-	-	-	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R226 390,00	R226 390,00	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	
EBITDA	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	-R406 116,80	-R230 131,58	-R299 694,16	-R154 963,91	-R48 320,31	-R54 775,72	-R62 005,78	R5 474,77	R5 474,77	

Enterprise budget for block 18 from year 2020 to 2034							IRR: 70%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	RGT	RGT	RGT	RGT	RGT	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	
Yield (4,5kg/block)	4955	4955	4955	4955	4955	0	0	1059	2470	3529	3529	3529	3529	3529	3529	
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R113,75	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	
Income	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89	-	-	R108 337,97	R252 788,61	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	
Chemical cost	-	-	-	-	-	-	-	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	
Royalties	-	-	-	-	-	-	-	R6 209,34	R14 488,47	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R368 131,53	R376 410,65	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
EBITDA	R191 936,02	R191 936,02	R191 936,02	R191 936,02	R191 936,02	-R406 116,80	-R230 131,58	-R302 678,66	-R171 653,37	-R75 288,50	-R81 743,91	-R88 973,97	-R21 493,42	-R21 493,42	-R21 493,42	

Enterprise budget for block 19 from year 2020 to 2034							IRR: 96%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	STL	STL	STL	STL	STL	STL	STL	STL	SGT	SGT	SGT	SGT	SGT	SGT	SGT	
Yield (4,5kg/block)	4469	4469	4469	4469	4469	4469	4469	4469	0	0	1226	2860	4086	4086	4086	
PIB (R/4,5kg)	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	
Income	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	-	-	R129 833,75	R302 945,41	R432 779,16	R432 779,16	R432 779,16	
Infield labour	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	-	-	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	
Chemical cost	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	-	-	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	
Royalties	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	-	-	R8 302,77	R19 373,12	R27 675,88	R27 675,88	R27 675,88	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R226 390,00	R226 390,00	R364 708,44	R375 778,79	R384 081,56	R384 081,56	R384 081,56	
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	
EBITDA	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	-R406 116,80	-R230 131,58	-R277 759,80	-R120 864,70	-R5 097,48	-R11 552,89	-R18 782,95	

Enterprise budget for block 20 from year 2020 to 2034							IRR: 24%									Block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	DBH	DBH	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	
Yield (4,5kg/block)	3180	3180	0	0	1543	3601	5144	5144	5144	5144	5144	5144	5144	5144	5144	
PIB (R/4,5kg)	R94,98	R94,98	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	
Income	R302 054,91	R302 054,91	-	-	R171 835,15	R400 948,67	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	
Infield labour	R18 611,80	R18 611,80	-	-	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	
Chemical cost	-	-	-	-	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	
Royalties	-	-	-	-	R13 983,69	R32 628,62	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R380 660,08	R399 305,00	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	
EBITDA	-R54 198,88	-R54 198,88	-R406 116,80	-R230 131,58	-R251 710,05	-R46 387,66	R105 700,04	R99 244,63	R92 014,57	R159 495,12	R159 495,12	R159 495,12	R159 495,12	R159 495,12	R159 495,12	

Table 4.76: Capital budget for Farm B in the Berg River from 2020 to 2034

Capital flow budget for farm B in the Berg River from year 2020 to 2034															Farm size (ha): 20
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Yield (4,5kg/block)	62 209	57 585	50 539	46 122	48 469	47 933	45 329	49 818	51 061	56 201	63 545	72 587	81 233	85 935	87 421
Income	R7 565 350,15	R6 924 016,63	R6 179 200,77	R5 621 079,87	R5 929 742,93	R6 086 840,22	R6 047 352,04	R6 738 146,90	R7 036 819,87	R7 936 560,76	R9 267 280,71	R10 600 972,52	R11 706 085,81	R12 285 043,35	R12 454 138,92
Production cost	R685 795,83	R619 210,28	R563 300,54	R575 009,00	R664 180,80	R704 375,15	R666 335,92	R773 577,73	R818 518,61	R863 782,13	R999 776,40	R1 107 115,00	R1 192 914,71	R1 214 743,62	R1 214 743,62
Infield labour	R457 454,56	R432 403,53	R377 317,39	R374 989,76	R402 402,66	R368 556,98	R327 715,31	R382 349,60	R395 919,27	R375 474,82	R409 660,59	R439 192,72	R473 266,58	R473 266,58	R473 266,58
Chemical cost	R41 974,80	R40 100,36	R39 276,76	R37 566,15	R45 473,15	R39 126,57	R32 601,93	R33 198,06	R34 857,69	R29 552,49	R39 725,39	R42 066,59	R42 066,59	R42 066,59	R42 066,59
Royalties	R186 366,47	R146 706,39	R146 706,39	R162 453,08	R216 304,99	R296 691,60	R306 018,68	R358 030,06	R387 741,65	R458 754,83	R550 390,42	R625 855,69	R677 581,54	R699 410,45	R699 410,45
Other direct production cost	R6 752 840,00	R6 641 588,00	R6 307 832,00	R6 196 580,00	R6 419 084,00	R6 307 832,00	R6 085 328,00	R6 307 832,00	R6 307 832,00	R6 196 580,00	R6 419 084,00	R6 641 588,00	R6 752 840,00	R6 752 840,00	R6 752 840,00
Fertiliser and organic material	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00	R429 100,00
Pesticide and herbicide	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00	R414 640,00
Supervision and labour	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00	R2 544 000,00
Fuel, oil, repairs, parts and maintenanc	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00	R400 000,00
Licences and insurance	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00	R47 500,00
Hired transport	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00	R79 640,00
Electricity	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00	R409 420,00
Water	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00	R40 440,00
Land, property and municipal taxes, ad	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00	R163 060,00
Packaging and marketing	R2 225 040,00	R2 113 788,00	R1 780 032,00	R1 668 780,00	R1 891 284,00	R1 780 032,00	R1 557 528,00	R1 780 032,00	R1 780 032,00	R1 668 780,00	R1 891 284,00	R2 113 788,00	R2 225 040,00	R2 225 040,00	R2 225 040,00
Total production Cost	R7 438 635,83	R7 260 798,28	R6 871 132,54	R6 771 589,00	R7 083 264,80	R7 012 207,15	R6 751 663,92	R7 081 409,73	R7 126 350,61	R7 060 362,13	R7 418 860,40	R7 748 703,00	R7 945 754,71	R7 967 583,62	R7 967 583,62
Establishment cost	-	R179 726,80	R542 921,98	R413 563,46	R363 896,62	R826 581,26	R910 988,65	R723 460,41	R1 192 409,02	R875 559,74	R691 481,49	R578 717,69	R460 123,69	R289 395,15	R324 122,57
Trellis system	-	R37 605,60	R112 816,80	R75 211,20	R37 605,60	R112 816,80	R112 816,80	R37 605,60	R112 816,80	R75 211,20	R37 605,60	-	-	-	-
Irrigation system	-	R12 079,60	R36 238,80	R24 159,20	R12 079,60	R36 238,80	R36 238,80	R12 079,60	R36 238,80	R24 159,20	R12 079,60	-	-	-	-
Drainage	-	R6 562,80	R19 688,40	R13 125,60	R6 562,80	R19 688,40	R19 688,40	R6 562,80	R19 688,40	R13 125,60	R6 562,80	-	-	-	-
Fuel oil repairs parts and maintenance	-	R5 427,20	R16 281,60	R10 854,40	R5 427,20	R16 281,60	R16 281,60	R5 427,20	R16 281,60	R10 854,40	R5 427,20	-	-	-	-
Hired transport	-	R183,20	R549,60	R366,40	R183,20	R549,60	R549,60	R183,20	R549,60	R366,40	R183,20	-	-	-	-
Nets	-	R39 731,20	R119 193,60	R79 462,40	R39 731,20	R119 193,60	R119 193,60	R39 731,20	R119 193,60	R79 462,40	R39 731,20	-	-	-	-
Pesticide and herbicde control	-	R1 463,20	R4 389,60	R2 926,40	R1 463,20	R4 389,60	R4 389,60	R1 463,20	R4 389,60	R2 926,40	R1 463,20	-	-	-	-
Soil preparation	-	R29 055,20	R87 165,60	R58 110,40	R29 055,20	R87 165,60	R87 165,60	R29 055,20	R87 165,60	R58 110,40	R29 055,20	-	-	-	-
Supervision, permanent-, seasonal- an	-	R24 800,00	R74 400,00	R49 600,00	R24 800,00	R74 400,00	R74 400,00	R24 800,00	R74 400,00	R49 600,00	R24 800,00	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	R22 818,80	R68 456,40	R45 637,60	R22 818,80	R68 456,40	R68 456,40	R22 818,80	R68 456,40	R45 637,60	R22 818,80	-	-	-	-
Installment	-	-	R3 741,58	R54 109,86	R184 169,82	R287 400,86	R371 808,25	R543 733,61	R653 228,62	R516 106,14	R511 754,69	R578 717,69	R460 123,69	R289 395,15	R324 122,57
EBITDA	R126 714,33	-R516 508,45	-R1 234 853,76	-R1 564 072,59	-R1 517 418,50	-R1 751 948,19	-R1 615 300,53	-R1 066 723,23	-R1 281 939,76	R638,88	R1 156 938,83	R2 273 551,84	R3 300 207,41	R4 028 064,58	R4 162 432,73

Table 4.77: Enterprise budget for Farm B block no. 1 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 1 in the Berg River from 2020 to 2034																block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	THS	THS	THS	THS	THS	THS	THS	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	
Yield (4,5kg/block)	2 898	2 898	2 898	2 898	2 898	2 898	2 898	-	-	1 611	3 759	5 370	5 370	5 370	5 370	
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R306,25	R306,25	R306,25	R306,25	R306,25	R306,25	R306,25	R306,25	
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R292,74	R292,74	R292,74	R292,74	R292,74	R292,74	R292,74	R292,74	
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R291,45	R291,45	R291,45	R291,45	R291,45	R291,45	R291,45	R291,45	
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R223,85	R223,85	R223,85	R223,85	R223,85	R223,85	R223,85	R223,85	
Income	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17	-	-	R360 610,12	R841 423,62	R1 202 033,74	R1 202 033,74	R1 202 033,74	R1 202 033,74	
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R56 225,71	R87 526,38	R111 001,88	R111 001,88	R111 001,88	R111 001,88	
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	
Royalties	-	-	-	-	-	-	-	-	-	R23 475,50	R54 776,17	R78 251,67	R78 251,67	R78 251,67	R78 251,67	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R393 867,71	R425 168,38	R448 643,88	R448 643,88	R448 643,88	R448 643,88	
Establishment cost	-	-	-	-	-	-	-	R179 726,80	R42 436,12	R47 528,46	R53 231,87	R59 619,69	R66 774,06	-	-	
Trellis system	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	
Irrigation system	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	
Drainage	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	
Hired transport	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	
Nets	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	
Pesticide and herbicde control	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	
Soil preparation	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vines	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	
Installment	-	-	-	-	-	-	-	-	R42 436,12	R47 528,46	R53 231,87	R59 619,69	R66 774,06	-	-	
EBITDA	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	R5 474,77	-R406 116,80	-R268 826,12	-R80 786,05	R363 023,36	R693 770,16	R686 615,80	R753 389,86	R753 389,86	

Table 4.78: Enterprise budget for Farm B block no. 2 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 2 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	I10	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	2 198	2 198	1 934	1 934	1 934	1 934	1 934	1 934	-	-	1 439	3 357	4 796	4 796	4 796
FOB (R/4,5kg)	R118,97	R118,97	R118,97	R118,97	R118,97	R118,97	R118,97	R118,97	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03
DIP (R/4,5kg)	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13
Ex-works (R/4,5kg)	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R116,37	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79
PIB (R/4,5kg)	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R111,95	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R246 019,11	R246 019,11	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	R216 496,81	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93	R741 491,93
Production cost	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	-	-	R26 950,27	R46 040,78	R60 358,66	R60 358,66	R60 358,66
Infield labour	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95
Trellis system	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95
EBITDA	-R110 309,03	-R110 309,03	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R139 831,33	-R406 116,80	-R230 131,58	-R146 335,27	R130 668,13	R338 234,61	R337 603,82	R336 897,32

Table 4.79: Enterprise budget for Farm B block no. 3 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 3 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	TAW	TAW	TAW	TAW	TAW	TAW	I75	I75	I75	I75	I75	I75	I75	I75	I75
Yield (4,5kg/block)	5 144	5 144	5 144	5 144	5 144	3 858	-	-	1 604	3 743	5 347	5 347	5 347	5 347	5 347
FOB (R/4,5kg)	R194,58	R194,58	R194,58	R194,58	R194,58	R194,58	R273,89	R273,89	R273,89	R273,89	R273,89	R273,89	R273,89	R273,89	R273,89
DIP (R/4,5kg)	R184,84	R184,84	R184,84	R184,84	R184,84	R184,84	R251,72	R251,72	R251,72	R251,72	R251,72	R251,72	R251,72	R251,72	R251,72
Ex-works (R/4,5kg)	R180,00	R180,00	R180,00	R180,00	R180,00	R180,00	R249,49	R249,49	R249,49	R249,49	R249,49	R249,49	R249,49	R249,49	R249,49
PIB (R/4,5kg)	R101,58	R101,58	R101,58	R101,58	R101,58	R101,58	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25	R166,25
Income	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R522 526,99	R391 895,24	-	-	R266 684,59	R622 264,04	R888 948,63	R888 948,63	R888 948,63	R888 948,63	R888 948,63
Production cost	R79 080,31	R79 080,31	R79 080,31	R79 080,31	R79 080,31	R66 568,83	-	-	R35 402,57	R64 692,70	R86 660,29	R86 660,29	R86 660,29	R86 660,29	R86 660,29
Infield labour	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	-	-	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58	R10 239,58
Chemical cost	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	-	-	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40	R3 195,40
Royalties	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R50 045,93	R37 534,44	-	-	R21 967,59	R51 257,71	R73 225,31	R73 225,31	R73 225,31	R73 225,31	R73 225,31
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R416 722,31	R404 210,83	R226 390,00	R226 390,00	R373 044,57	R402 334,70	R424 302,29	R424 302,29	R424 302,29	R424 302,29	R424 302,29
Establishment cost	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95	R7 385,22	R8 271,45
Trellis system	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	R3 741,58	R4 190,57	R4 693,44	R5 256,65	R5 887,45	R6 593,95	R7 385,22	R8 271,45
EBITDA	R105 804,68	R105 804,68	R105 804,68	R105 804,68	R105 804,68	-R12 315,59	-R406 116,80	-R230 131,58	-R110 550,56	R215 235,90	R459 389,68	R458 758,89	R458 052,39	R457 261,12	R456 374,89

Table 4.80: Enterprise budget for Farm B block no. 4 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 4 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	S34	S34	S34	S34	S34	S34
Yield (4,5kg/block)	4 098	3 073	3 073	3 073	2 705	2 705	2 705	2 705	2 705	-	-	1 281	2 988	4 269	4 269
FOB (R/4,5kg)	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30
DIP (R/4,5kg)	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
Ex-works (R/4,5kg)	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
PIB (R/4,5kg)	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R648 461,52	R486 346,14	R486 346,14	R486 346,14	R427 984,60	R427 984,60	R427 984,60	R427 984,60	R427 984,60	-	-	R131 049,21	R305 781,49	R436 830,70	R436 830,70
Production cost	R66 585,55	R56 670,53	R56 670,53	R56 670,53	R53 101,12	R53 101,12	R53 101,12	R53 101,12	R53 101,12	-	-	R26 751,96	R36 766,67	R44 277,70	R44 277,70
Infield labour	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	-	-	R18 470,44	R18 470,44	R18 470,44	R18 470,44
Chemical cost	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	-	-	R770,50	R770,50	R770,50	R770,50
Royalties	R39 660,08	R29 745,06	R29 745,06	R29 745,06	R26 175,65	R26 175,65	R26 175,65	R26 175,65	R26 175,65	-	-	R7 511,03	R17 525,73	R25 036,76	R25 036,76
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R404 227,55	R394 312,53	R394 312,53	R394 312,53	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R390 743,12	R226 390,00	R226 390,00	R364 393,96	R374 408,67	R381 919,70	R381 919,70
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
Trellis system	-	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	R244 233,97	R92 033,61	R92 033,61	R92 033,61	R37 241,48	R37 241,48	R37 241,48	R37 241,48	R37 241,48	-R406 116,80	-R230 131,58	-R276 229,87	-R116 658,51	R1 115,92	-R5 339,49

Table 4.81: Enterprise budget for Farm B block no. 5 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 5 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS
Yield (4,5kg/block)	2 173	2 173	1 913	1 913	1 913	-	-	912	2 129	3 041	3 041	3 041	3 041	3 041	3 041
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76	R133,76
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43	R129,43
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25	R123,25
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88	R110,88
Income	R281 018,38	R281 018,38	R247 296,17	R247 296,17	R247 296,17	-	-	R101 165,92	R236 053,81	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73	R337 219,73
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
Trellis system	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-
EBITDA	-R88 198,02	-R88 198,02	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R303 515,43	-R173 773,75	-R78 371,59	-R84 827,00	-R92 057,06	-R24 576,51	-R24 576,51	-R24 576,51

Table 4.82: Enterprise budget for Farm B block no. 6 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 6 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	RGT	RGT	RGT	RGT	RGT
Yield (4,5kg/block)	3 180	3 180	3 180	3 180	3 180	3 180	3 180	3 180	3 180	2 385	-	-	1 487	3 469	4 955
FOB (R/4,5kg)	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R113,36	R130,03	R130,03	R130,03	R130,03	R130,03
DIP (R/4,5kg)	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R107,72	R124,09	R124,09	R124,09	R124,09	R124,09
Ex-works (R/4,5kg)	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R105,30	R123,02	R123,02	R123,02	R123,02	R123,02
PIB (R/4,5kg)	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R94,98	R113,75	R113,75	R113,75	R113,75	R113,75
Income	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R302 054,91	R226 541,19	-	-	R169 095,57	R394 556,32	R563 651,89
Production cost	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	-	-	R34 073,86	R34 073,86	R34 073,86
Infield labour	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	R18 611,80	-	-	R34 073,86	R34 073,86	R34 073,86
Chemical cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R371 715,86	R371 715,86	R371 715,86
Establishment cost	-	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08
Trellis system	-	-	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	-	-	R183,20	-	-	-	-
Nets	-	-	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08
EBITDA	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R54 198,88	-R129 712,61	-R406 116,80	-R230 131,58	-R245 505,41	-R25 190,87	R138 140,94

Table 4.83: Enterprise budget for Farm B block no. 7 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 7 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGT	RGT	RGT	RGT	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
Yield (4,5kg/block)	3 270	3 270	3 270	3 270	-	-	879	2 051	2 930	2 930	2 930	2 930	2 930	2 930	2 930
FOB (R/4,5kg)	R130,03	R130,03	R130,03	R130,03	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83	R111,83
DIP (R/4,5kg)	R124,09	R124,09	R124,09	R124,09	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38
Ex-works (R/4,5kg)	R123,02	R123,02	R123,02	R123,02	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38	R109,38
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11	R105,11
Income	R372 010,25	R372 010,25	R372 010,25	R372 010,25	-	-	R92 395,06	R215 588,48	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54	R307 983,54
Production cost	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14	R18 686,14
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54	R17 862,54
Chemical cost	-	-	-	-	-	-	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60	R823,60
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14	R356 328,14
Establishment cost	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-
Trellis system	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	-
Nets	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-
EBITDA	R294,38	R294,38	R294,38	R294,38	-R406 116,80	-R230 131,58	-R306 818,19	-R188 770,98	-R102 139,68	-R108 595,09	-R115 825,15	-R48 344,60	-R48 344,60	-R48 344,60	-R48 344,60

Table 4.84: Enterprise budget for Farm B block no. 8 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 8 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	CSS	CSS	CSS	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI	ALI
Yield (4,5kg/block)	2 281	2 007	2 007	-	-	1 611	3 759	5 370	5 370	5 370	5 370	5 370	5 370	5 370	5 370
FOB (R/4,5kg)	R179,87	R179,87	R179,87	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28	R290,28
DIP (R/4,5kg)	R168,18	R168,18	R168,18	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79	R278,79
Ex-works (R/4,5kg)	R161,43	R161,43	R161,43	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78	R277,78
PIB (R/4,5kg)	R127,84	R127,84	R127,84	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29	R223,29
Income	R291 600,18	R256 608,16	R256 608,16	-	-	R359 707,99	R839 318,65	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64	R1 199 026,64
Production cost	R24 154,24	R24 154,24	R24 154,24	-	-	R55 124,63	R84 957,19	R107 331,61	R107 331,61	R107 331,61	R107 331,61	R107 331,61	R107 331,61	R107 331,61	R107 331,61
Infield labour	R22 191,64	R22 191,64	R22 191,64	-	-	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17	R31 439,17
Chemical cost	R1 962,60	R1 962,60	R1 962,60	-	-	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04	R1 311,04
Royalties	-	-	-	-	-	R22 374,42	R52 206,98	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40	R74 581,40
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R392 766,63	R422 599,19	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61	R444 973,61
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
Trellis system	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
EBITDA	-R70 196,06	-R105 188,08	-R105 188,08	-R406 116,80	-R230 131,58	-R75 943,75	R368 688,13	R700 257,94	R693 802,53	R686 572,48	R754 053,03	R754 053,03	R754 053,03	R754 053,03	R754 053,03

Table 4.85: Enterprise budget for Farm B block no. 9 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 9 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	ATR	ATR	ATR	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17
Yield (4,5kg/block)	3 259	3 259	3 259	-	-	1 059	2 470	3 529	3 529	3 529	3 529	3 529	3 529	3 529	3 529
FOB (R/4,5kg)	R151,86	R151,86	R151,86	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30
DIP (R/4,5kg)	R145,53	R145,53	R145,53	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
Ex-works (R/4,5kg)	R144,64	R144,64	R144,64	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33
Income	R440 506,98	R440 506,98	R440 506,98	-	-	R108 337,97	R252 788,61	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58
Production cost	R18 254,39	R18 254,39	R18 254,39	-	-	R30 489,53	R38 768,65	R44 978,00	R44 978,00	R44 978,00	R44 978,00	R44 978,00	R44 978,00	R44 978,00	R44 978,00
Infield labour	R16 957,03	R16 957,03	R16 957,03	-	-	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20
Chemical cost	R1 297,36	R1 297,36	R1 297,36	-	-	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98
Royalties	-	-	-	-	-	R6 209,34	R14 488,47	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R368 131,53	R376 410,65	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00
Establishment cost	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
Trellis system	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-
EBITDA	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R302 678,66	-R171 653,37	-R75 288,50	-R81 743,91	-R88 973,97	-R21 493,42	-R21 493,42	-R21 493,42	-R21 493,42	-R21 493,42

Table 4.86: Enterprise budget for Farm B block no. 10 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 10 in the Berg River from 2020 to 2034																block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	THS	THS	THS	THS	THS	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	
Yield (4,5kg/block)	2 898	2 898	2 898	2 173	2 173	-	-	1 574	3 672	5 246	5 246	5 246	5 246	5 246	5 246	
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R218,80	R218,80	R218,80	R218,80	R218,80	R218,80	R218,80	R218,80	R218,80	R218,80	
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R207,14	R207,14	R207,14	R207,14	R207,14	R207,14	R207,14	R207,14	R207,14	R207,14	
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R206,15	R206,15	R206,15	R206,15	R206,15	R206,15	R206,15	R206,15	R206,15	R206,15	
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	R168,21	
Income	R374 691,17	R374 691,17	R374 691,17	R281 018,38	R281 018,38	-	-	R264 742,75	R617 733,09	R882 475,84	R882 475,84	R882 475,84	R882 475,84	R882 475,84	R882 475,84	
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R55 588,67	R78 546,37	R95 764,64	R95 764,64	R95 764,64	R95 764,64	R95 764,64	R95 764,64	
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	
Royalties	-	-	-	-	-	-	-	R17 218,27	R40 175,97	R57 394,24	R57 394,24	R57 394,24	R57 394,24	R57 394,24	R57 394,24	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R393 230,67	R416 188,37	R433 406,64	R433 406,64	R433 406,64	R433 406,64	R433 406,64	R433 406,64	
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
Trellis system	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	
Irrigation system	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	
Drainage	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	
Fuel oil repairs parts and maintenance	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	
Hired transport	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	
Nets	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	
Pesticide and herbicde control	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	
Soil preparation	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	
Supervision, permanent-, seasonal- an	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vines	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	
Installment	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
EBITDA	R5 474,77	R5 474,77	R5 474,77	-R88 198,02	-R88 198,02	-R406 116,80	-R230 131,58	-R171 373,03	R153 513,40	R395 274,12	R388 818,71	R381 588,65	R449 069,20	R449 069,20	R449 069,20	

Table 4.87: Enterprise budget for Farm B block no. 11 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 11 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	RGB	RGB	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE	SGE
Yield (4,5kg/block)	1 934	1 934	-	-	1 388	3 239	4 627	4 627	4 627	4 627	4 627	4 627	4 627	4 627	4 627
FOB (R/4,5kg)	R111,83	R111,83	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92	R151,92
DIP (R/4,5kg)	R109,38	R109,38	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81	R143,81
Ex-works (R/4,5kg)	R109,38	R109,38	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47	R142,47
PIB (R/4,5kg)	R105,11	R105,11	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92	R102,92
Income	R203 269,14	R203 269,14	-	-	R142 863,25	R333 347,59	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84	R476 210,84
Production cost	R18 686,14	R18 686,14	-	-	R23 977,92	R38 036,59	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60	R48 580,60
Infield labour	R17 862,54	R17 862,54	-	-	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83	R9 591,83
Chemical cost	R823,60	R823,60	-	-	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08	R3 842,08
Royalties	-	-	-	-	R10 544,01	R24 602,68	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69	R35 146,69
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 328,14	R356 328,14	R226 390,00	R226 390,00	R361 619,92	R375 678,59	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60	R386 222,60
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
Trellis system	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	-R153 059,00	-R153 059,00	-R406 116,80	-R230 131,58	-R261 641,77	-R90 362,33	R36 193,16	R29 737,75	R22 507,69	R89 988,24	R89 988,24	R89 988,24	R89 988,24	R89 988,24	R89 988,24

Table 4.88: Enterprise budget for Farm B block no. 12 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 12 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	CSS	CSS	CSS	CSS	CSS	CSS	CSS	CSS	THS	THS	THS	THS	THS	THS	THS
Yield (4,5kg/block)	3 041	2 281	2 281	2 281	2 007	2 007	2 007	2 007	-	-	869	2 028	2 898	2 898	2 898
FOB (R/4,5kg)	R113,85	R113,85	R113,85	R113,85	R113,85	R113,85	R113,85	R113,85	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80
DIP (R/4,5kg)	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57
Ex-works (R/4,5kg)	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R111,36	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68
PIB (R/4,5kg)	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R108,03	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30
Income	R328 552,02	R246 414,01	R246 414,01	R246 414,01	R216 844,33	R216 844,33	R216 844,33	R216 844,33	-	-	R112 407,35	R262 283,82	R374 691,17	R374 691,17	R374 691,17
Production cost	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	R24 154,24	-	-	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40
Infield labour	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	R22 191,64	-	-	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60
Chemical cost	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	R1 962,60	-	-	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80
Royalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R361 796,24	R226 390,00	R226 390,00	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
Trellis system	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
EBITDA	-R33 244,23	-R115 382,23	-R115 382,23	-R115 382,23	-R144 951,91	-R144 951,91	-R144 951,91	-R144 951,91	-R406 116,80	-R230 131,58	-R299 694,16	-R154 963,91	-R48 320,31	-R54 775,72	-R62 005,78

Table 4.89: Enterprise budget for Farm B block no. 13 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 13 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	ATR	ATR	ATR	ATR	ATR	ATR	S35	S35	S35	S35	S35	S35	S35	S35	S35
Yield (4,5kg/block)	978	2 281	3 259	3 259	3 259	3 259	-	-	1 574	3 672	5 246	5 246	5 246	5 246	5 246
FOB (R/4,5kg)	R151,86	R151,86	R151,86	R151,86	R151,86	R151,86	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10
DIP (R/4,5kg)	R145,53	R145,53	R145,53	R145,53	R145,53	R145,53	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18
Ex-works (R/4,5kg)	R144,64	R144,64	R144,64	R144,64	R144,64	R144,64	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57
PIB (R/4,5kg)	R135,16	R135,16	R135,16	R135,16	R135,16	R135,16	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83
Income	R132 152,09	R308 354,89	R440 506,98	R440 506,98	R440 506,98	R440 506,98	-	-	R232 667,03	R542 889,73	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76
Production cost	R18 254,39	R18 254,39	R18 254,39	R18 254,39	R18 254,39	R18 254,39	-	-	R54 117,09	R75 112,68	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37
Infield labour	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	R16 957,03	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05
Chemical cost	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	R1 297,36	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35
Royalties	-	-	-	-	-	-	-	-	R15 746,69	R36 742,28	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R355 896,39	R226 390,00	R226 390,00	R391 759,09	R412 754,68	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
Trellis system	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	-R223 744,30	-R47 541,50	R84 610,59	R84 610,59	R84 610,59	R84 610,59	-R406 116,80	-R230 131,58	-R201 977,17	R82 103,73	R293 260,31	R286 804,90	R279 574,84	R347 055,39	R347 055,39

Table 4.90: Enterprise budget for Farm B block no. 14 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 14 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	THS	THS	THS	THS	THS	THS	THS	THS	THS	I10	I10	I10	I10	I10	I10
Yield (4,5kg/block)	1 913	1 913	1 913	1 913	1 913	1 913	1 913	1 913	1 913	-	-	1 439	3 357	4 796	4 796
FOB (R/4,5kg)	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R199,03	R199,03	R199,03	R199,03	R199,03	R199,03
DIP (R/4,5kg)	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R190,13	R190,13	R190,13	R190,13	R190,13	R190,13
Ex-works (R/4,5kg)	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R188,79	R188,79	R188,79	R188,79	R188,79	R188,79
PIB (R/4,5kg)	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R154,61	R154,61	R154,61	R154,61	R154,61	R154,61
Income	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	R247 296,17	-	-	R222 447,58	R519 044,35	R741 491,93	R741 491,93
Production cost	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	-	-	R26 950,27	R46 040,78	R60 358,66	R60 358,66
Infield labour	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	-	-	R11 061,70	R11 061,70	R11 061,70	R11 061,70
Chemical cost	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	-	-	R1 570,70	R1 570,70	R1 570,70	R1 570,70
Royalties	-	-	-	-	-	-	-	-	-	-	-	R14 317,88	R33 408,38	R47 726,26	R47 726,26
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R226 390,00	R226 390,00	R364 592,27	R383 682,78	R398 000,66	R398 000,66
Establishment cost	-	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
Trellis system	-	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49
EBITDA	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R121 920,23	-R406 116,80	-R230 131,58	-R185 029,81	R87 330,25	R289 696,19	R283 240,78

Table 4.91: Enterprise budget for Farm B block no. 15 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 15 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE	PSE
Yield (4,5kg/block)	3 180	2 385	-	-	1 229	2 869	4 098	4 098	4 098	4 098	4 098	4 098	4 098	4 098	4 098
FOB (R/4,5kg)	R145,80	R145,80	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56	R193,56
DIP (R/4,5kg)	R139,57	R139,57	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38	R183,38
Ex-works (R/4,5kg)	R138,68	R138,68	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96	R182,96
PIB (R/4,5kg)	R129,30	R129,30	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24	R158,24
Income	R411 199,21	R308 399,40	-	-	R194 538,46	R453 923,06	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52	R648 461,52
Production cost	R18 611,80	R18 611,80	-	-	R38 823,49	R54 687,52	R66 585,55	R66 585,55	R66 585,55	R66 585,55	R66 585,55	R66 585,55	R66 585,55	R66 585,55	R66 585,55
Infield labour	R18 611,80	R18 611,80	-	-	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03	R25 051,03
Chemical cost	-	-	-	-	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44	R1 874,44
Royalties	-	-	-	-	R11 898,02	R27 762,05	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08	R39 660,08
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R376 465,49	R392 329,52	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55	R404 227,55
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
Trellis system	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	R54 945,41	-R47 854,40	-R406 116,80	-R230 131,58	-R224 812,15	R13 562,21	R190 438,89	R183 983,48	R176 753,42	R244 233,97	R244 233,97	R244 233,97	R244 233,97	R244 233,97	R244 233,97

Table 4.92: Enterprise budget for Farm B block no. 16 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 16 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	PSE	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35	S35
Yield (4,5kg/block)	3 073	-	-	1 574	3 672	5 246	5 246	5 246	5 246	5 246	5 246	5 246	5 246	5 246	5 246
FOB (R/4,5kg)	R193,56	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10	R200,10
DIP (R/4,5kg)	R183,38	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18	R191,18
Ex-works (R/4,5kg)	R182,96	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57	R189,57
PIB (R/4,5kg)	R158,24	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83	R147,83
Income	R486 346,14	-	-	R232 667,03	R542 889,73	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76	R775 556,76
Production cost	R56 670,53	-	-	R54 117,09	R75 112,68	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37	R90 859,37
Infield labour	R25 051,03	-	-	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05	R36 821,05
Chemical cost	R1 874,44	-	-	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35	R1 549,35
Royalties	R29 745,06	-	-	R15 746,69	R36 742,28	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98	R52 488,98
Other direct production cost	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R394 312,53	R226 390,00	R226 390,00	R391 759,09	R412 754,68	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37	R428 501,37
Establishment cost	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	-
Trellis system	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-	-
EBITDA	R92 033,61	-R406 116,80	-R230 131,58	-R201 977,17	R82 103,73	R293 260,31	R286 804,90	R279 574,84	R347 055,39	R347 055,39	R347 055,39	R347 055,39	R347 055,39	R347 055,39	R347 055,39

Table 4.93: Enterprise budget for Farm B block no. 17 in the Berg River from 2020 to 2034

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	SGT	SGT	SGT	SGT	SGT	SGT	THS	THS	THS	THS	THS	THS	THS	THS	THS
Yield (4,5kg/block)	4 086	4 086	4 086	4 086	4 086	4 086	-	-	869	2 028	2 898	2 898	2 898	2 898	2 898
FOB (R/4,5kg)	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80	R145,80
DIP (R/4,5kg)	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57	R139,57
Ex-works (R/4,5kg)	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68	R138,68
PIB (R/4,5kg)	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30	R129,30
Income	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	R432 779,16	-	-	R112 407,35	R262 283,82	R374 691,17	R374 691,17	R374 691,17	R374 691,17	R374 691,17
Production cost	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	R46 439,56	-	-	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40	R31 574,40
Infield labour	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27	-	-	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60	R26 832,60
Chemical cost	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40	-	-	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80	R4 741,80
Royalties	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	R27 675,88	-	-	-	-	-	-	-	-	-
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R384 081,56	R226 390,00	R226 390,00	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40	R369 216,40
Establishment cost	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
Trellis system	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-
Nets	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-
EBITDA	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	R48 697,60	-R406 116,80	-R230 131,58	-R299 694,16	-R154 963,91	-R48 320,31	-R54 775,72	-R62 005,78	R5 474,77	R5 474,77

Table 4.94: Enterprise budget for Farm B block no. 18 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 18 in the Berg River from 2020 to 2034																block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Variety	RGT	RGT	RGT	RGT	RGT	I17	I17	I17	I17	I17	I17	I17	I17	I17	I17	
Yield (4,5kg/block)	4 955	4 955	4 955	4 955	4 955	-	-	1 059	2 470	3 529	3 529	3 529	3 529	3 529	3 529	
FOB (R/4,5kg)	R130,03	R130,03	R130,03	R130,03	R130,03	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	R117,30	
DIP (R/4,5kg)	R124,09	R124,09	R124,09	R124,09	R124,09	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	
Ex-works (R/4,5kg)	R123,02	R123,02	R123,02	R123,02	R123,02	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	R110,72	
PIB (R/4,5kg)	R113,75	R113,75	R113,75	R113,75	R113,75	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	R102,33	
Income	R563 651,89	R563 651,89	R563 651,89	R563 651,89	R563 651,89	-	-	R108 337,97	R252 788,61	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	R361 126,58	
Production cost	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R30 489,53	R38 768,65	R44 978,00	R44 978,00	R44 978,00	R44 978,00	R44 978,00	R44 978,00	
Infield labour	R34 073,86	R34 073,86	R34 073,86	R34 073,86	R34 073,86	-	-	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	R22 454,20	
Chemical cost	-	-	-	-	-	-	-	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	R1 825,98	
Royalties	-	-	-	-	-	-	-	R6 209,34	R14 488,47	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	R20 697,81	
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	
Total production Cost	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R371 715,86	R226 390,00	R226 390,00	R368 131,53	R376 410,65	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	R382 620,00	
Establishment cost	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
Trellis system	-	-	-	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	
Irrigation system	-	-	-	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	
Drainage	-	-	-	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	
Fuel oil repairs parts and maintenance	-	-	-	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	
Hired transport	-	-	-	-	-	R183,20	-	-	-	-	-	-	-	-	-	
Nets	-	-	-	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	
Pesticide and herbicde control	-	-	-	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	
Soil preparation	-	-	-	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	
Supervision, permanent-, seasonal- an	-	-	-	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vines	-	-	-	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	
Installment	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	
EBITDA	R191 936,02	R191 936,02	R191 936,02	R191 936,02	R191 936,02	-R406 116,80	-R230 131,58	-R302 678,66	-R171 653,37	-R75 288,50	-R81 743,91	-R88 973,97	-R21 493,42	-R21 493,42	-R21 493,42	

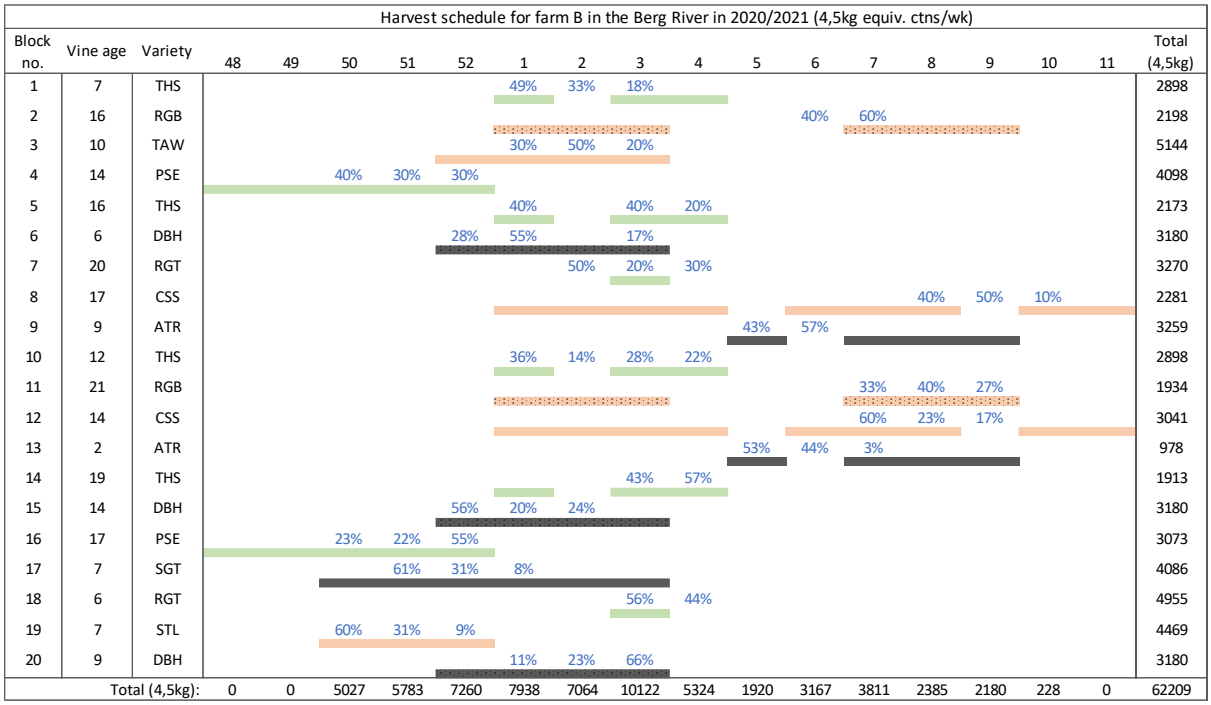
Table 4.95: Enterprise budget for Farm B block no. 19 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 19 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	STL	STL	STL	STL	STL	STL	STL	STL	SGT	SGT	SGT	SGT	SGT	SGT	SGT
Yield (4,5kg/block)	4 469	4 469	4 469	4 469	4 469	4 469	4 469	4 469	-	-	1 226	2 860	4 086	4 086	4 086
FOB (R/4,5kg)	R175,61	R175,61	R175,61	R175,61	R175,61	R175,61	R175,61	R175,61	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47	R135,47
DIP (R/4,5kg)	R166,26	R166,26	R166,26	R166,26	R166,26	R166,26	R166,26	R166,26	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02	R131,02
Ex-works (R/4,5kg)	R162,34	R162,34	R162,34	R162,34	R162,34	R162,34	R162,34	R162,34	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45	R124,45
PIB (R/4,5kg)	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R135,26	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92	R105,92
Income	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	R604 468,78	-	-	R129 833,75	R302 945,41	R432 779,16	R432 779,16	R432 779,16
Production cost	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	R64 549,62	-	-	R27 066,44	R38 136,79	R46 439,56	R46 439,56	R46 439,56
Infield labour	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	R20 269,37	-	-	R14 903,27	R14 903,27	R14 903,27	R14 903,27	R14 903,27
Chemical cost	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	R5 040,72	-	-	R3 860,40	R3 860,40	R3 860,40	R3 860,40	R3 860,40
Royalties	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	R39 239,52	-	-	R8 302,77	R19 373,12	R27 675,88	R27 675,88	R27 675,88
Other direct production cost	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R402 191,62	R226 390,00	R226 390,00	R364 708,44	R375 778,79	R384 081,56	R384 081,56	R384 081,56
Establishment cost	-	-	-	-	-	-	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
Trellis system	-	-	-	-	-	-	-	-	R37 605,60	-	-	-	-	-	-
Irrigation system	-	-	-	-	-	-	-	-	R12 079,60	-	-	-	-	-	-
Drainage	-	-	-	-	-	-	-	-	R6 562,80	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	-	-	-	-	-	-	R5 427,20	-	-	-	-	-	-
Hired transport	-	-	-	-	-	-	-	-	R183,20	-	-	-	-	-	-
Nets	-	-	-	-	-	-	-	-	R39 731,20	-	-	-	-	-	-
Pesticide and herbicde control	-	-	-	-	-	-	-	-	R1 463,20	-	-	-	-	-	-
Soil preparation	-	-	-	-	-	-	-	-	R29 055,20	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	-	-	-	-	-	-	R24 800,00	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	-	-	-	-	-	-	R22 818,80	-	-	-	-	-	-
Installment	-	-	-	-	-	-	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55
EBITDA	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	R202 277,16	-R406 116,80	-R230 131,58	-R277 759,80	-R120 864,70	-R5 097,48	-R11 552,89	-R18 782,95

Table 4.96: Enterprise budget for Farm B block no. 20 in the Berg River from 2020 to 2034

Enterprise budget for farm B block no. 20 in the Berg River from 2020 to 2034															block size (ha): 1
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Variety	DBH	DBH	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW	TAW
Yield (4,5kg/block)	3 180	3 180	-	-	1 543	3 601	5 144	5 144	5 144	5 144	5 144	5 144	5 144	5 144	5 144
FOB (R/4,5kg)	R113,36	R113,36	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23	R181,23
DIP (R/4,5kg)	R107,72	R107,72	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86	R169,86
Ex-works (R/4,5kg)	R105,30	R105,30	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82	R168,82
PIB (R/4,5kg)	R94,98	R94,98	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35	R111,35
Income	R302 054,91	R302 054,91	-	-	R171 835,15	R400 948,67	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82	R572 783,82
Production cost	R18 611,80	R18 611,80	-	-	R43 018,08	R61 663,00	R75 646,69	R75 646,69	R75 646,69	R75 646,69	R75 646,69	R75 646,69	R75 646,69	R75 646,69	R75 646,69
Infield labour	R18 611,80	R18 611,80	-	-	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91	R26 843,91
Chemical cost	-	-	-	-	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48	R2 190,48
Royalties	-	-	-	-	R13 983,69	R32 628,62	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31	R46 612,31
Other direct production cost	R337 642,00	R337 642,00	R226 390,00	R226 390,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00	R337 642,00
Fertiliser and organic material	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00	R21 455,00
Pesticide and herbicide	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00	R20 732,00
Supervision and labour	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00	R127 200,00
Fuel, oil, repairs, parts and maintenanc	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00	R20 000,00
Licences and insurance	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00	R2 375,00
Hired transport	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00	R3 982,00
Electricity	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00	R20 471,00
Water	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00	R2 022,00
Land, property and municipal taxes, ad	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00	R8 153,00
Packaging and marketing	R111 252,00	R111 252,00	-	-	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00	R111 252,00
Total production Cost	R356 253,80	R356 253,80	R226 390,00	R226 390,00	R380 660,08	R399 305,00	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69	R413 288,69
Establishment cost	-	-	R179 726,80	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
Trellis system	-	-	R37 605,60	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation system	-	-	R12 079,60	-	-	-	-	-	-	-	-	-	-	-	-
Drainage	-	-	R6 562,80	-	-	-	-	-	-	-	-	-	-	-	-
Fuel oil repairs parts and maintenance	-	-	R5 427,20	-	-	-	-	-	-	-	-	-	-	-	-
Hired transport	-	-	R183,20	-	-	-	-	-	-	-	-	-	-	-	-
Nets	-	-	R39 731,20	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide and herbicde control	-	-	R1 463,20	-	-	-	-	-	-	-	-	-	-	-	-
Soil preparation	-	-	R29 055,20	-	-	-	-	-	-	-	-	-	-	-	-
Supervision, permanent-, seasonal- an	-	-	R24 800,00	-	-	-	-	-	-	-	-	-	-	-	-
Trellising	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vines	-	-	R22 818,80	-	-	-	-	-	-	-	-	-	-	-	-
Installment	-	-	-	R3 741,58	R42 885,11	R48 031,32	R53 795,08	R60 250,49	R67 480,55	-	-	-	-	-	-
EBITDA	-R54 198,88	-R54 198,88	-R406 116,80	-R230 131,58	-R251 710,05	-R46 387,66	R105 700,04	R99 244,63	R92 014,57	R159 495,12	R159 495,12	R159 495,12	R159 495,12	R159 495,12	R159 495,12

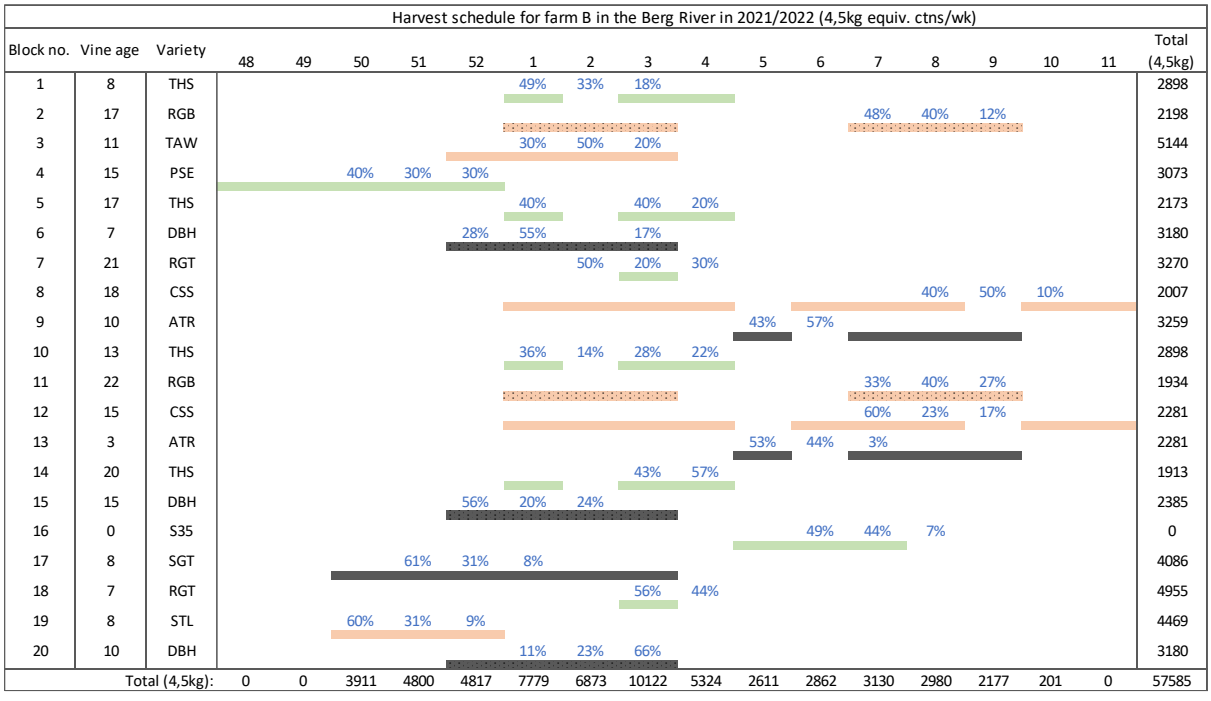
Figure 4.48: Harvest schedule for Farm B in the Berg River for 2020/2021 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2020/2021 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	7	THS						49%	33%	18%									2898
2	16	RGB											40%	60%					2198
3	10	TAW						30%	50%	20%									5144
4	14	PSE			40%	30%	30%												4098
5	16	THS						40%		40%	20%								2173
6	6	DBH					28%	55%		17%									3180
7	20	RGT							50%	20%	30%								3270
8	17	CSS													40%	50%	10%		2281
9	9	ATR										43%	57%						3259
10	12	THS						36%	14%	28%	22%								2898
11	21	RGB												33%	40%	27%			1934
12	14	CSS												60%	23%	17%			3041
13	2	ATR										53%	44%	3%					978
14	19	THS								43%	57%								1913
15	14	DBH					56%	20%	24%										3180
16	17	PSE			23%	22%	55%												3073
17	7	SGT				61%	31%	8%											4086
18	6	RGT								56%	44%								4955
19	7	STL			60%	31%	9%												4469
20	9	DBH						11%	23%	66%									3180
		Total (4,5kg):	0	0	5027	5783	7260	7938	7064	10122	5324	1920	3167	3811	2385	2180	228	0	62209

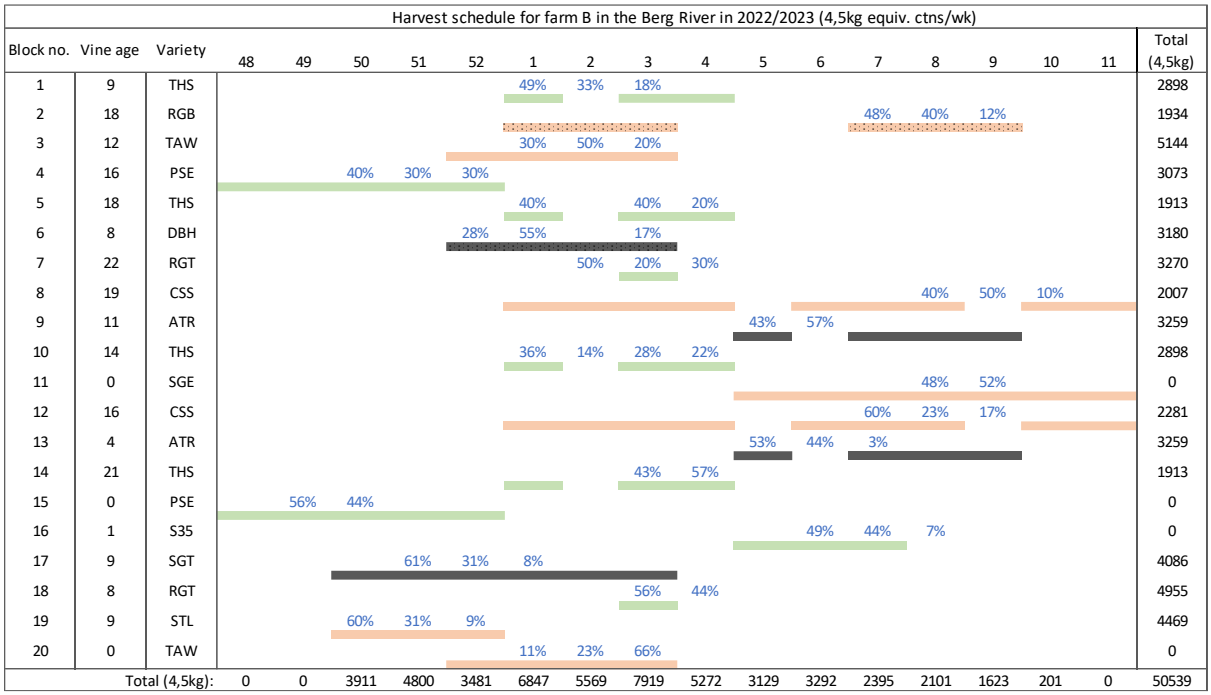
Figure 4.49: Harvest schedule for Farm B in the Berg River for 2021/2022 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2021/2022 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	8	THS						49%	33%	18%									2898
2	17	RGB												48%	40%	12%			2198
3	11	TAW						30%	50%	20%									5144
4	15	PSE			40%	30%	30%												3073
5	17	THS						40%		40%	20%								2173
6	7	DBH					28%	55%		17%									3180
7	21	RGT							50%	20%	30%								3270
8	18	CSS													40%	50%	10%		2007
9	10	ATR										43%	57%						3259
10	13	THS						36%	14%	28%	22%								2898
11	22	RGB												33%	40%	27%			1934
12	15	CSS												60%	23%	17%			2281
13	3	ATR										53%	44%	3%					2281
14	20	THS								43%	57%								1913
15	15	DBH					56%	20%	24%										2385
16	0	S35											49%	44%	7%				0
17	8	SGT				61%	31%	8%											4086
18	7	RGT								56%	44%								4955
19	8	STL			60%	31%	9%												4469
20	10	DBH						11%	23%	66%									3180
		Total (4,5kg):	0	0	3911	4800	4817	7779	6873	10122	5324	2611	2862	3130	2980	2177	201	0	57585

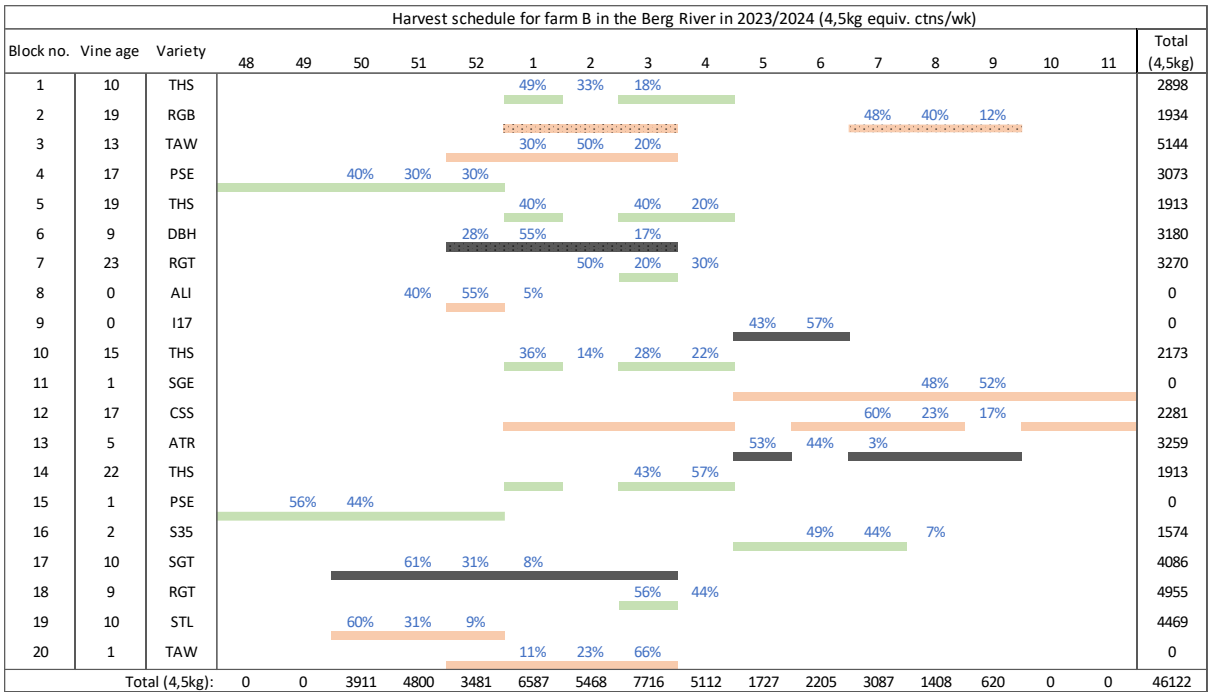
Figure 4.50: Harvest schedule for Farm B in the Berg River for 2022/2023 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2022/2023 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	9	THS						49%	33%	18%									2898
2	18	RGB												48%	40%	12%			1934
3	12	TAW						30%	50%	20%									5144
4	16	PSE			40%	30%	30%												3073
5	18	THS						40%		40%	20%								1913
6	8	DBH					28%	55%		17%									3180
7	22	RGT							50%	20%	30%								3270
8	19	CSS													40%	50%	10%		2007
9	11	ATR										43%	57%						3259
10	14	THS						36%	14%	28%	22%								2898
11	0	SGE													48%	52%			0
12	16	CSS												60%	23%	17%			2281
13	4	ATR										53%	44%	3%					3259
14	21	THS								43%	57%								1913
15	0	PSE		56%	44%														0
16	1	S35											49%	44%	7%				0
17	9	SGT				61%	31%	8%											4086
18	8	RGT								56%	44%								4955
19	9	STL			60%	31%	9%												4469
20	0	TAW						11%	23%	66%									0
		Total (4,5kg):	0	0	3911	4800	3481	6847	5569	7919	5272	3129	3292	2395	2101	1623	201	0	50539

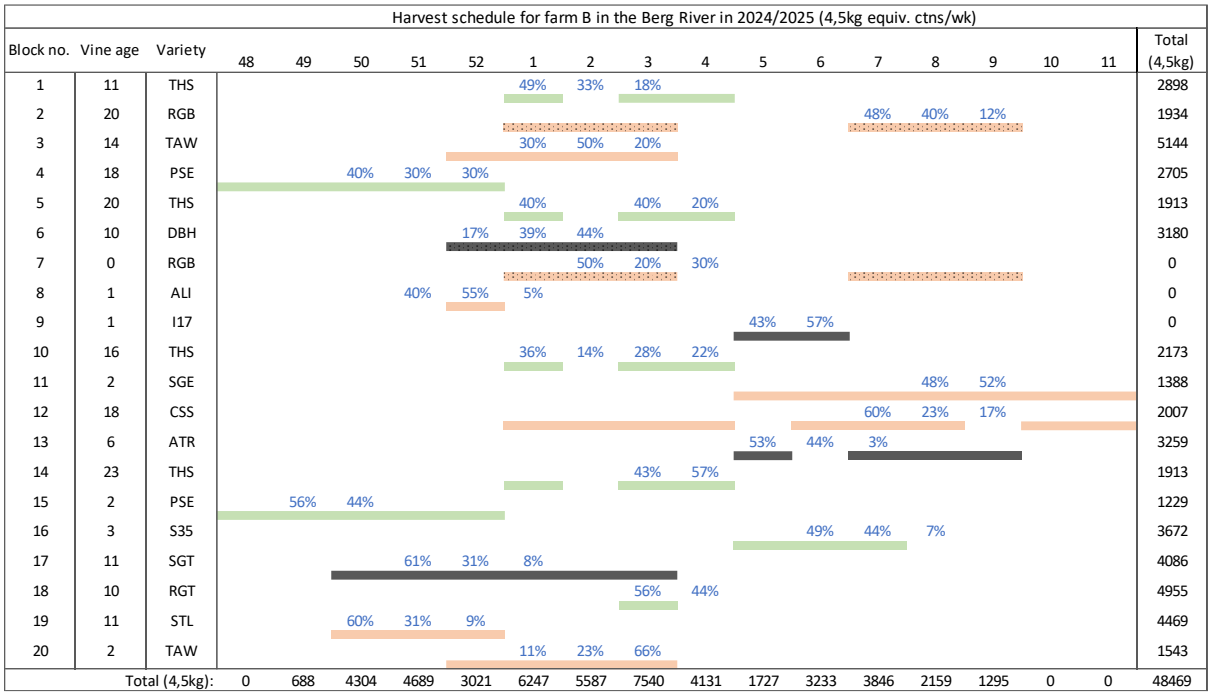
Figure 4.51: Harvest schedule for Farm B in the Berg River for 2023/2024 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2023/2024 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	10	THS						49%	33%	18%									2898
2	19	RGB												48%	40%	12%			1934
3	13	TAW						30%	50%	20%									5144
4	17	PSE			40%	30%	30%												3073
5	19	THS						40%		40%	20%								1913
6	9	DBH					28%	55%		17%									3180
7	23	RGT							50%	20%	30%								3270
8	0	ALI				40%	55%	5%											0
9	0	I17										43%	57%						0
10	15	THS						36%	14%	28%	22%								2173
11	1	SGE													48%	52%			0
12	17	CSS												60%	23%	17%			2281
13	5	ATR										53%	44%	3%					3259
14	22	THS								43%	57%								1913
15	1	PSE		56%	44%														0
16	2	S35											49%	44%	7%				1574
17	10	SGT				61%	31%	8%											4086
18	9	RGT								56%	44%								4955
19	10	STL			60%	31%	9%												4469
20	1	TAW						11%	23%	66%									0
		Total (4,5kg):	0	0	3911	4800	3481	6587	5468	7716	5112	1727	2205	3087	1408	620	0	0	46122

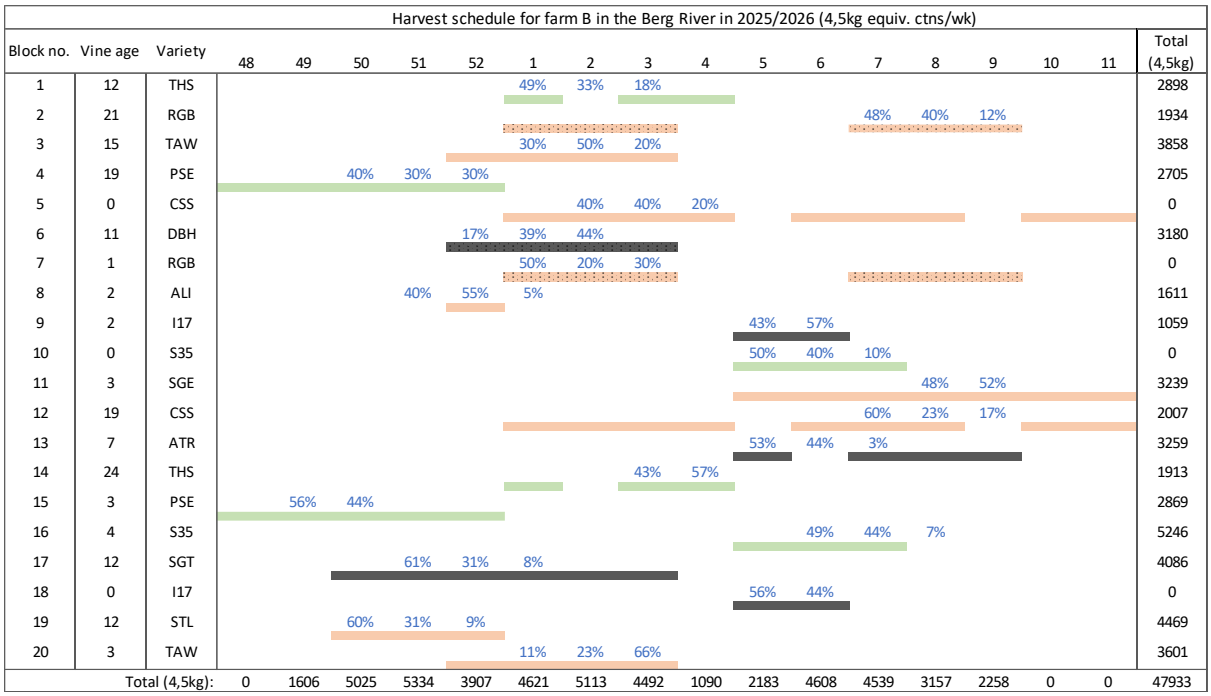
Figure 4.52: Harvest schedule for Farm B in the Berg River for 2024/2025 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2024/2025 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	11	THS						49%	33%	18%									2898
2	20	RGB												48%	40%	12%			1934
3	14	TAW						30%	50%	20%									5144
4	18	PSE			40%	30%	30%												2705
5	20	THS						40%		40%	20%								1913
6	10	DBH					17%	39%	44%										3180
7	0	RGB							50%	20%	30%								0
8	1	ALI				40%	55%	5%											0
9	1	I17										43%	57%						0
10	16	THS						36%	14%	28%	22%								2173
11	2	SGE													48%	52%			1388
12	18	CSS												60%	23%	17%			2007
13	6	ATR										53%	44%	3%					3259
14	23	THS								43%	57%								1913
15	2	PSE		56%	44%														1229
16	3	S35											49%	44%	7%				3672
17	11	SGT				61%	31%	8%											4086
18	10	RGT								56%	44%								4955
19	11	STL			60%	31%	9%												4469
20	2	TAW						11%	23%	66%									1543
		Total (4,5kg):	0	688	4304	4689	3021	6247	5587	7540	4131	1727	3233	3846	2159	1295	0	0	48469

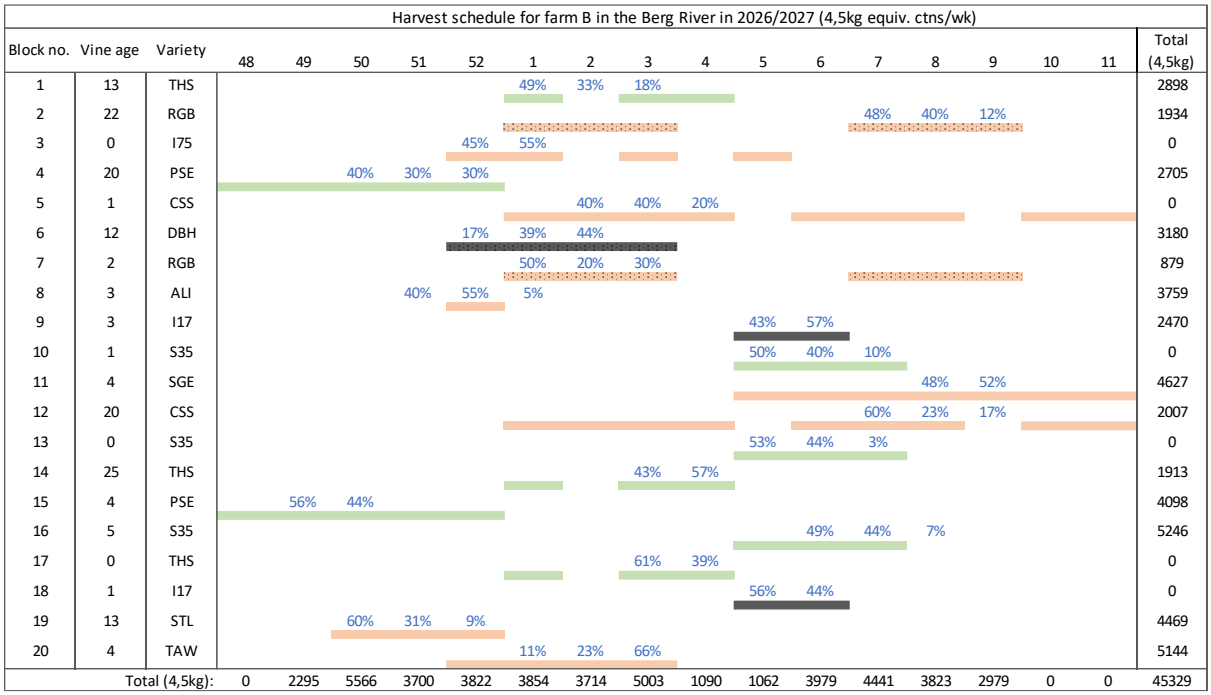
Figure 4.53: Harvest schedule for Farm B in the Berg River for 2025/2026 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2025/2026 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	12	THS						49%	33%	18%									2898
2	21	RGB												48%	40%	12%			1934
3	15	TAW						30%	50%	20%									3858
4	19	PSE			40%	30%	30%												2705
5	0	CSS							40%	40%	20%								0
6	11	DBH					17%	39%	44%										3180
7	1	RGB						50%	20%	30%									0
8	2	ALI				40%	55%	5%											1611
9	2	I17										43%	57%						1059
10	0	S35										50%	40%	10%					0
11	3	SGE													48%	52%			3239
12	19	CSS												60%	23%	17%			2007
13	7	ATR										53%	44%	3%					3259
14	24	THS								43%	57%								1913
15	3	PSE		56%	44%														2869
16	4	S35											49%	44%	7%				5246
17	12	SGT				61%	31%	8%											4086
18	0	I17										56%	44%						0
19	12	STL			60%	31%	9%												4469
20	3	TAW						11%	23%	66%									3601
		Total (4,5kg):	0	1606	5025	5334	3907	4621	5113	4492	1090	2183	4608	4539	3157	2258	0	0	47933

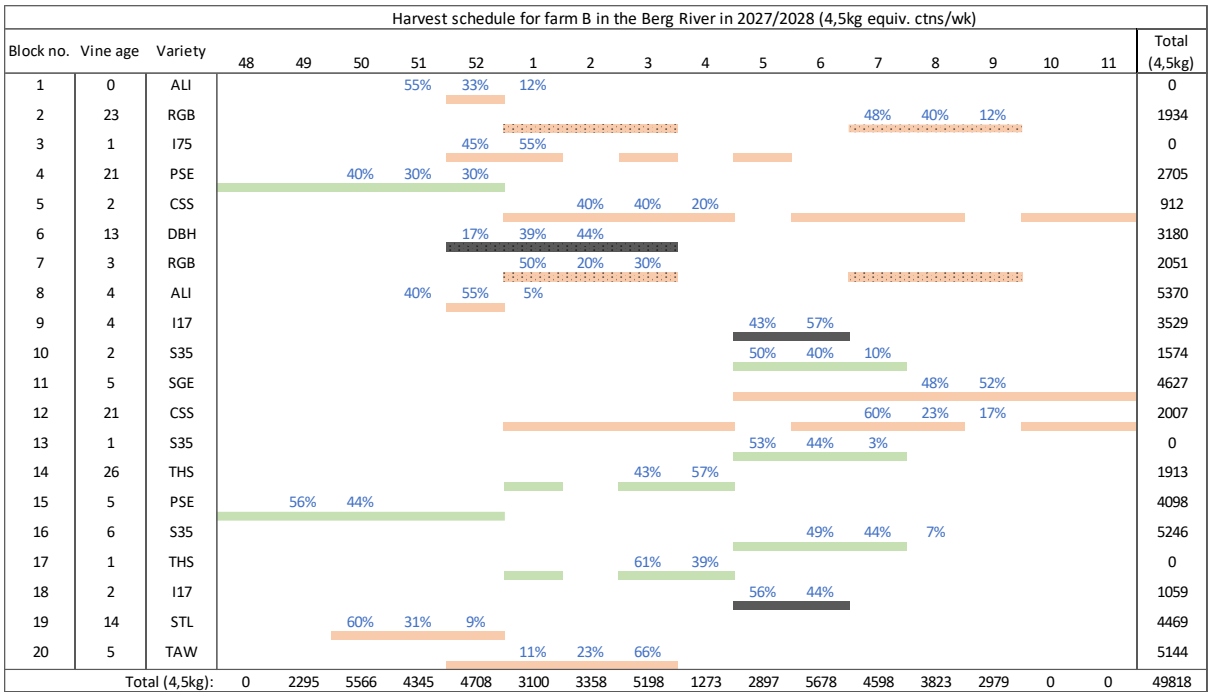
Figure 4.54: Harvest schedule for Farm B in the Berg River for 2026/2027 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2026/2027 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	13	THS						49%	33%	18%									2898
2	22	RGB												48%	40%	12%			1934
3	0	I75					45%	55%											0
4	20	PSE			40%	30%	30%												2705
5	1	CSS							40%	40%	20%								0
6	12	DBH					17%	39%	44%										3180
7	2	RGB						50%	20%	30%									879
8	3	ALI				40%	55%	5%											3759
9	3	I17										43%	57%						2470
10	1	S35										50%	40%	10%					0
11	4	SGE													48%	52%			4627
12	20	CSS												60%	23%	17%			2007
13	0	S35										53%	44%	3%					0
14	25	THS								43%	57%								1913
15	4	PSE		56%	44%														4098
16	5	S35											49%	44%	7%				5246
17	0	THS								61%	39%								0
18	1	I17										56%	44%						0
19	13	STL			60%	31%	9%												4469
20	4	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	5566	3700	3822	3854	3714	5003	1090	1062	3979	4441	3823	2979	0	0	45329

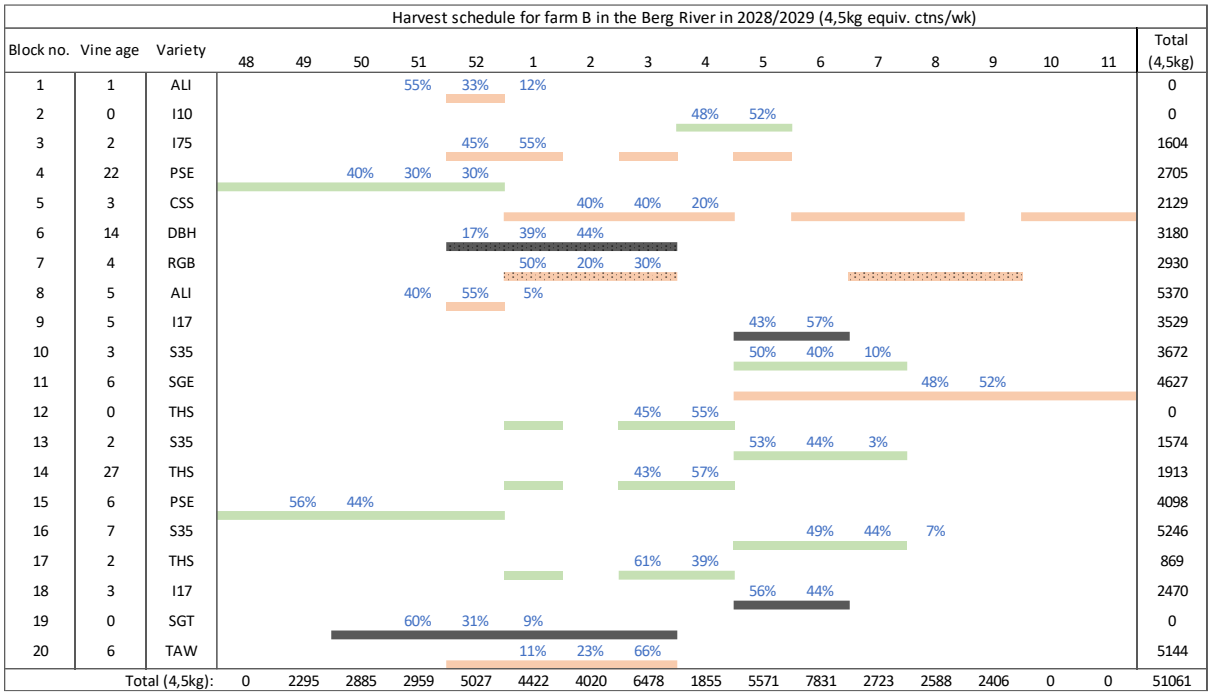
Figure 4.55: Harvest schedule for Farm B in the Berg River for 2027/2028 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2027/2028 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	0	ALI				55%	33%	12%											0
2	23	RGB												48%	40%	12%			1934
3	1	I75					45%	55%											0
4	21	PSE			40%	30%	30%												2705
5	2	CSS							40%	40%	20%								912
6	13	DBH					17%	39%	44%										3180
7	3	RGB						50%	20%	30%									2051
8	4	ALI				40%	55%	5%											5370
9	4	I17										43%	57%						3529
10	2	S35										50%	40%	10%					1574
11	5	SGE													48%	52%			4627
12	21	CSS												60%	23%	17%			2007
13	1	S35										53%	44%	3%					0
14	26	THS								43%	57%								1913
15	5	PSE		56%	44%														4098
16	6	S35											49%	44%	7%				5246
17	1	THS								61%	39%								0
18	2	I17										56%	44%						1059
19	14	STL			60%	31%	9%												4469
20	5	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	5566	4345	4708	3100	3358	5198	1273	2897	5678	4598	3823	2979	0	0	49818

Figure 4.56: Harvest schedule for Farm B in the Berg River for 2028/2029 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2028/2029 (4,5kg equiv. ctns/wk)

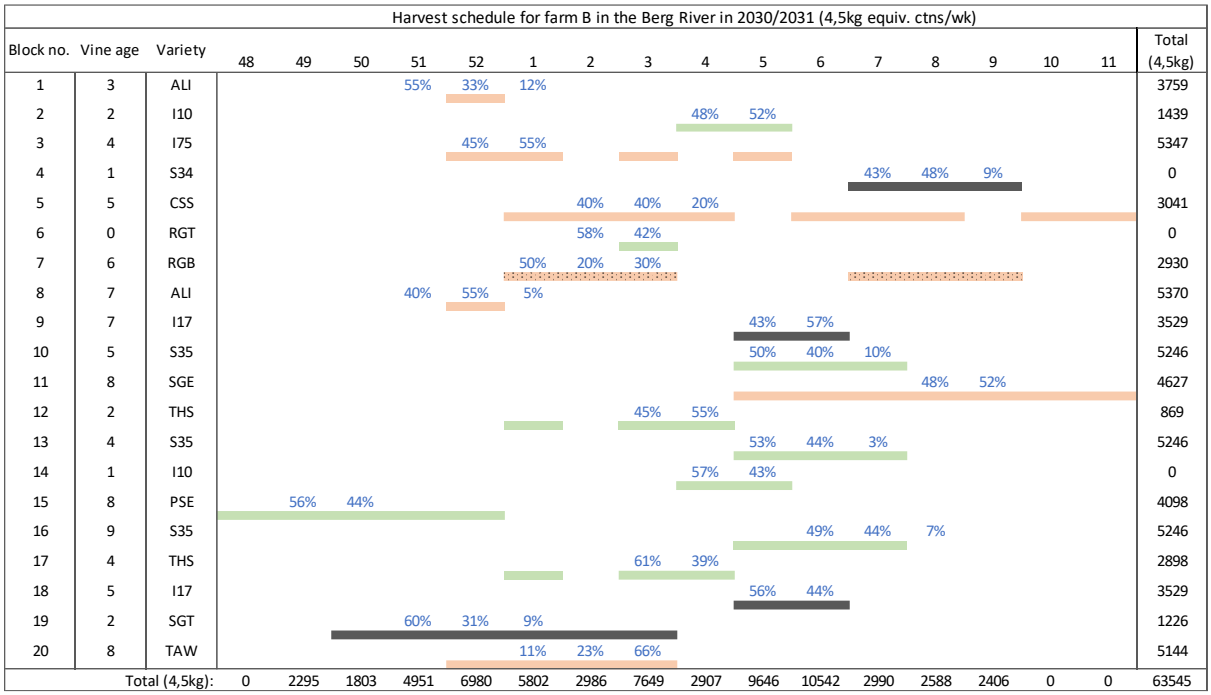
Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	1	ALI				55%	33%	12%											0
2	0	I10									48%	52%							0
3	2	I75					45%	55%											1604
4	22	PSE			40%	30%	30%												2705
5	3	CSS							40%	40%	20%								2129
6	14	DBH					17%	39%	44%										3180
7	4	RGB						50%	20%	30%									2930
8	5	ALI				40%	55%	5%											5370
9	5	I17										43%	57%						3529
10	3	S35										50%	40%	10%					3672
11	6	SGE													48%	52%			4627
12	0	THS								45%	55%								0
13	2	S35										53%	44%	3%					1574
14	27	THS								43%	57%								1913
15	6	PSE		56%	44%														4098
16	7	S35											49%	44%	7%				5246
17	2	THS								61%	39%								869
18	3	I17										56%	44%						2470
19	0	SGT				60%	31%	9%											0
20	6	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	2885	2959	5027	4422	4020	6478	1855	5571	7831	2723	2588	2406	0	0	51061

Figure 4.57: Harvest schedule for Farm B in the Berg River for 2029/2030 (4,5kg equiv. cartons/week)

Harvest schedule for farm B in the Berg River in 2029/2030 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	2	ALI				55%	33%	12%											1611
2	1	I10									48%	52%							0
3	3	I75					45%	55%											3743
4	0	S34												43%	48%	9%			0
5	4	CSS							40%	40%	20%								3041
6	15	DBH					17%	39%	44%										2385
7	5	RGB						50%	20%	30%									2930
8	6	ALI				40%	55%	5%											5370
9	6	I17										43%	57%						3529
10	4	S35										50%	40%	10%					5246
11	7	SGE													48%	52%			4627
12	1	THS								45%	55%								0
13	3	S35										53%	44%	3%					3672
14	0	I10									57%	43%							0
15	7	PSE		56%	44%														4098
16	8	S35											49%	44%	7%				5246
17	3	THS								61%	39%								2028
18	4	I17										56%	44%						3529
19	1	SGT				60%	31%	9%											0
20	7	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	1803	3034	5575	5482	4035	6728	1399	8063	9849	2943	2588	2406	0	0	56201

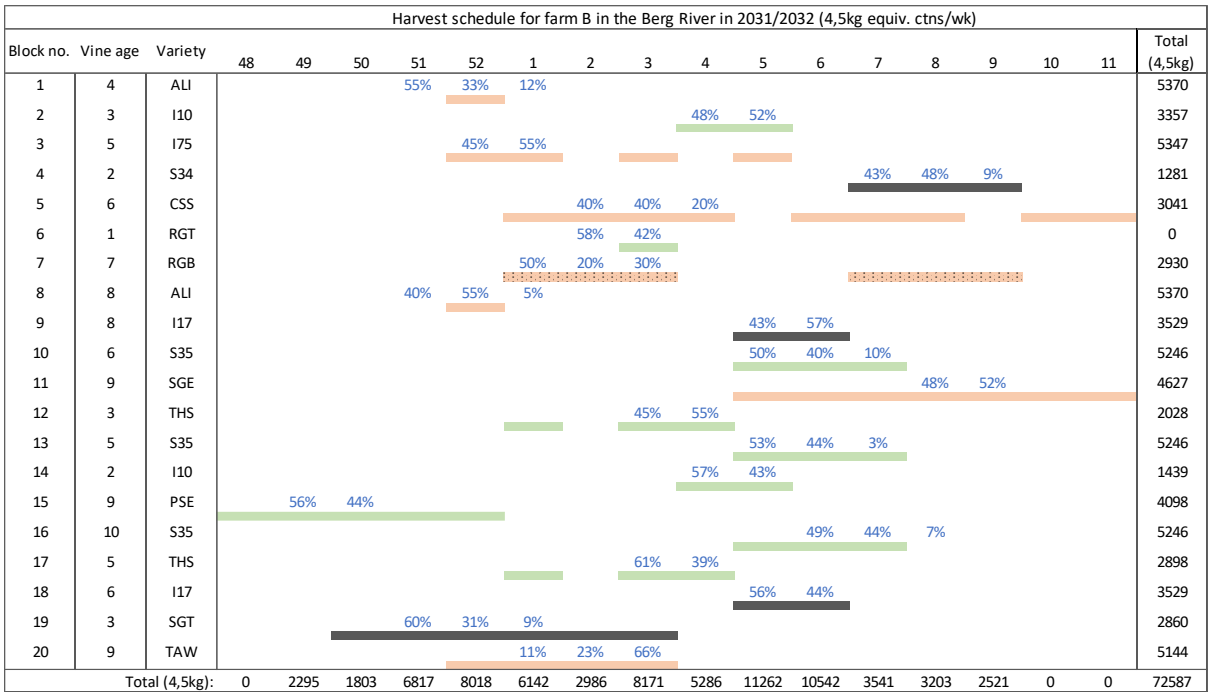
Figure 4.58: Harvest schedule for Farm B in the Berg River for 2030/2031 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2030/2031 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	3	ALI				55%	33%	12%											3759
2	2	I10									48%	52%							1439
3	4	I75					45%	55%											5347
4	1	S34												43%	48%	9%			0
5	5	CSS							40%	40%	20%								3041
6	0	RGT							58%	42%									0
7	6	RGB						50%	20%	30%									2930
8	7	ALI				40%	55%	5%											5370
9	7	I17										43%	57%						3529
10	5	S35										50%	40%	10%					5246
11	8	SGE													48%	52%			4627
12	2	THS								45%	55%								869
13	4	S35										53%	44%	3%					5246
14	1	I10									57%	43%							0
15	8	PSE		56%	44%														4098
16	9	S35											49%	44%	7%				5246
17	4	THS								61%	39%								2898
18	5	I17										56%	44%						3529
19	2	SGT				60%	31%	9%											1226
20	8	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	1803	4951	6980	5802	2986	7649	2907	9646	10542	2990	2588	2406	0	0	63545

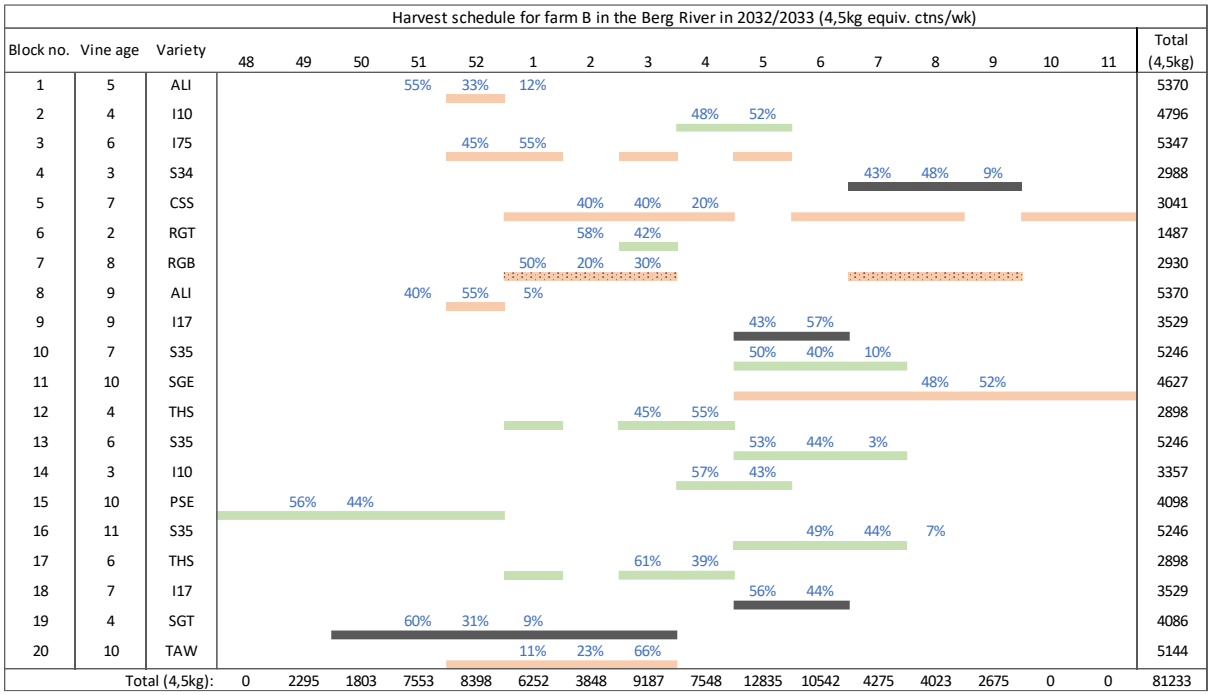
Figure 4.59: Harvest schedule for Farm B in the Berg River for 2031/2032 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2031/2032 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	4	ALI				55%	33%	12%											5370
2	3	I10									48%	52%							3357
3	5	I75					45%	55%											5347
4	2	S34												43%	48%	9%			1281
5	6	CSS							40%	40%	20%								3041
6	1	RGT							58%	42%									0
7	7	RGB						50%	20%	30%									2930
8	8	ALI				40%	55%	5%											5370
9	8	I17										43%	57%						3529
10	6	S35										50%	40%	10%					5246
11	9	SGE													48%	52%			4627
12	3	THS								45%	55%								2028
13	5	S35										53%	44%	3%					5246
14	2	I10									57%	43%							1439
15	9	PSE		56%	44%														4098
16	10	S35											49%	44%	7%				5246
17	5	THS								61%	39%								2898
18	6	I17										56%	44%						3529
19	3	SGT				60%	31%	9%											2860
20	9	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	1803	6817	8018	6142	2986	8171	5286	11262	10542	3541	3203	2521	0	0	72587

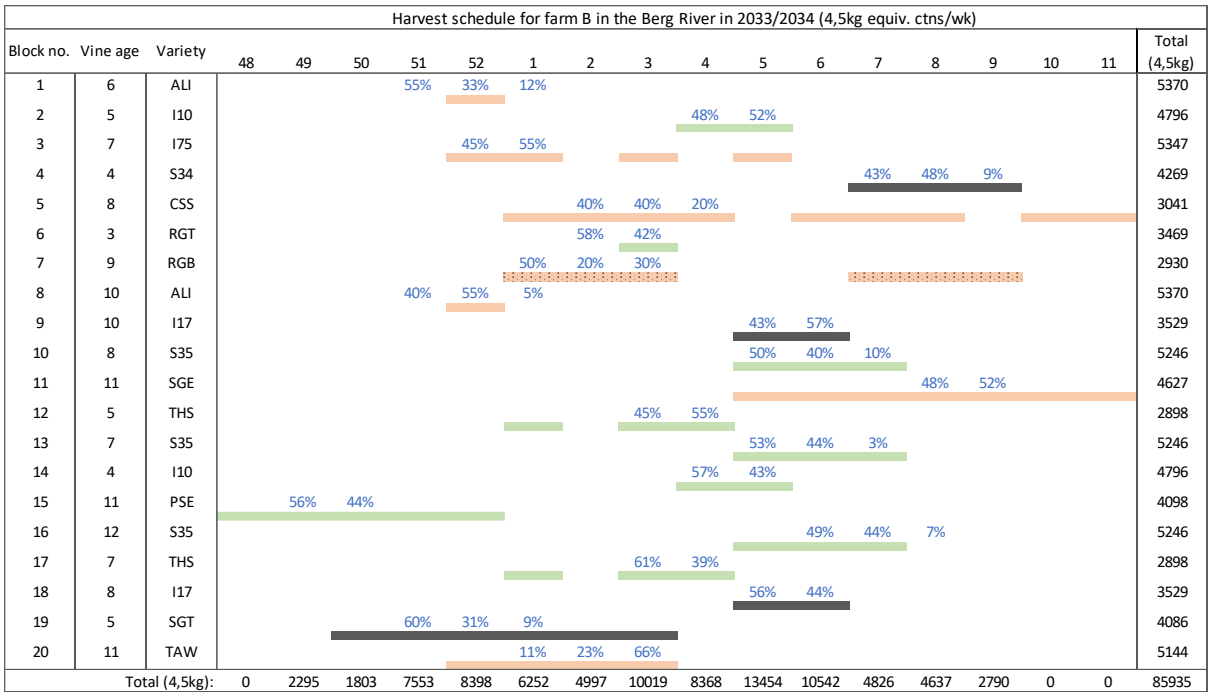
Figure 4.60: Harvest schedule for Farm B in the Berg River for 2032/2033 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2032/2033 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	5	ALI				55%	33%	12%											5370
2	4	I10									48%	52%							4796
3	6	I75					45%	55%											5347
4	3	S34												43%	48%	9%			2988
5	7	CSS							40%	40%	20%								3041
6	2	RGT							58%	42%									1487
7	8	RGB						50%	20%	30%									2930
8	9	ALI				40%	55%	5%											5370
9	9	I17										43%	57%						3529
10	7	S35										50%	40%	10%					5246
11	10	SGE													48%	52%			4627
12	4	THS								45%	55%								2898
13	6	S35										53%	44%	3%					5246
14	3	I10									57%	43%							3357
15	10	PSE		56%	44%														4098
16	11	S35											49%	44%	7%				5246
17	6	THS								61%	39%								2898
18	7	I17										56%	44%						3529
19	4	SGT				60%	31%	9%											4086
20	10	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	1803	7553	8398	6252	3848	9187	7548	12835	10542	4275	4023	2675	0	0	81233

Figure 4.61: Harvest schedule for Farm B in the Berg River for 2033/2034 (4,5kg equiv. cartons/week)



Harvest schedule for farm B in the Berg River in 2033/2034 (4,5kg equiv. ctns/wk)

Block no.	Vine age	Variety	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total (4,5kg)
1	6	ALI				55%	33%	12%											5370
2	5	I10									48%	52%							4796
3	7	I75					45%	55%											5347
4	4	S34												43%	48%	9%			4269
5	8	CSS							40%	40%	20%								3041
6	3	RGT							58%	42%									3469
7	9	RGB						50%	20%	30%									2930
8	10	ALI				40%	55%	5%											5370
9	10	I17										43%	57%						3529
10	8	S35										50%	40%	10%					5246
11	11	SGE													48%	52%			4627
12	5	THS								45%	55%								2898
13	7	S35										53%	44%	3%					5246
14	4	I10									57%	43%							4796
15	11	PSE		56%	44%														4098
16	12	S35											49%	44%	7%				5246
17	7	THS								61%	39%								2898
18	8	I17										56%	44%						3529
19	5	SGT				60%	31%	9%											4086
20	11	TAW						11%	23%	66%									5144
		Total (4,5kg):	0	2295	1803	7553	8398	6252	4997	10019	8368	13454	10542	4826	4637	2790	0	0	85935

Figure 4.62: Harvest schedule for Farm B in the Berg River for 2034/2035 (4,5kg equiv. cartons/week)

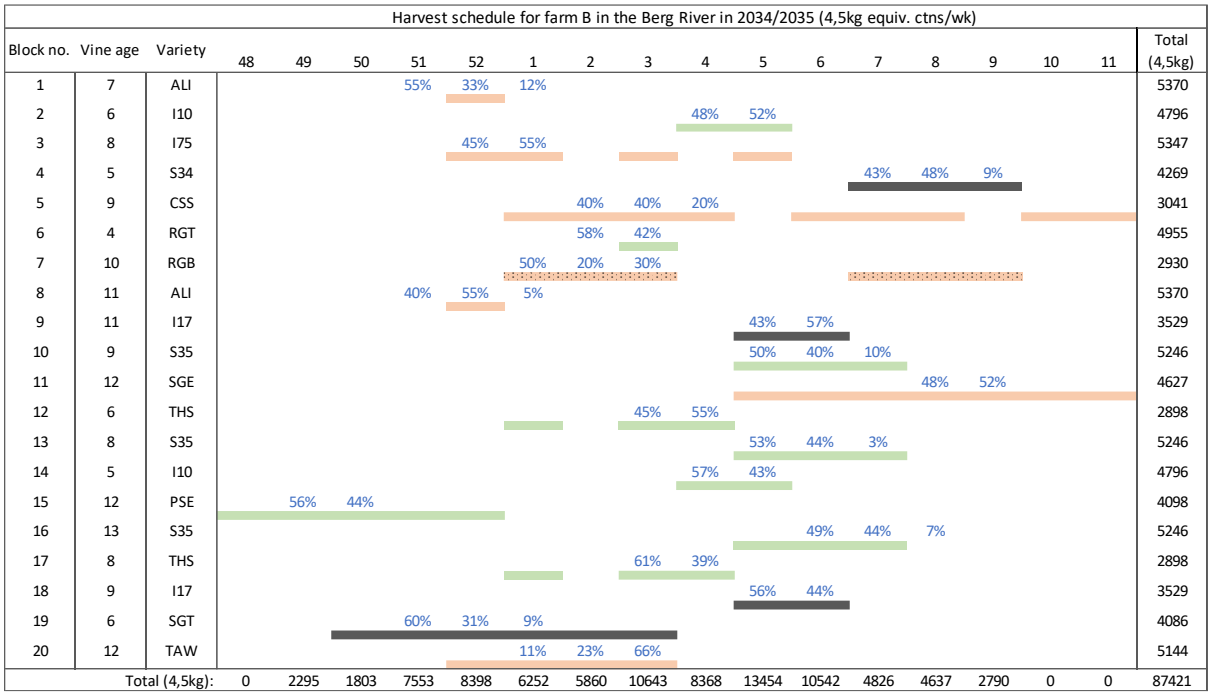


Table 4.97: Unequal block sizes in Farm B

Block no.	Block size	Variety	Harvest/ ha	Proportion of total yield (%)	Harvest/ block	Proportion of total yield (%)
1	1,4	ALI	5 370	6%	7 518	4%
2	3	I10	4 796	5%	14 388	7%
3	2	I75	5 347	6%	10 694	6%
4	1,9	S34	4 269	5%	8 111	4%
5	1,6	CSS	3 041	3%	4 866	3%
6	3,2	RGT	4 955	6%	15 856	8%
7	1,7	RGB	2 930	3%	4 981	3%
8	3,2	ALI	5 370	6%	17 184	9%
9	1,8	I17	3 529	4%	6 352	3%
10	1,2	S35	5 246	6%	6 295	3%
11	2,2	SGE	4 627	5%	10 179	5%
12	1,8	THS	2 898	3%	5 216	3%
13	1,4	S35	5 246	6%	7 344	4%
14	2,1	I10	4 796	5%	10 072	5%
15	3	PSE	4 098	5%	12 294	6%
16	3,4	S35	5 246	6%	17 836	9%
17	1,3	THS	2 898	3%	3 767	2%
18	1,2	I17	3 529	4%	4 235	2%
19	2,5	SGT	4 086	5%	10 215	5%
20	3	TAW	5 144	6%	15 432	8%
Total	42,9		87 421		192 837	

Table 4.98: Annual harvest per week for Farm B with unequal block sizes

	Weeks:	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	Total
Year	2020	0	0	12 221	11 338	18 928	16 697	14 234	19 348	8 034	3 248	6 583	8 685	5 881	5 729	730	0	131 656
	2021	0	0	9 039	8 455	11 261	16 220	13 661	19 348	8 034	4 215	4 749	7 128	7 853	5 849	642	0	116 455
	2022	0	0	9 039	8 455	7 253	13 572	9 749	12 884	7 951	4 941	5 352	5 385	5 834	4 606	642	0	95 665
	2023	0	0	9 039	8 455	7 253	13 259	9 628	12 641	7 759	2 418	4 630	7 740	3 640	1 394	0	0	87 857
	2024	0	2 065	10 382	8 245	5 924	12 140	12 390	12 855	6 091	2 418	8 126	10 583	5 492	2 898	0	0	99 610
	2025	0	4 819	12 545	10 307	8 759	10 143	12 159	11 130	2 289	3 238	11 834	12 938	7 821	5 016	0	0	112 998
	2026	0	6 885	14 168	9 816	10 893	9 003	9 665	13 091	2 289	1 912	11 275	12 801	9 286	6 604	0	0	117 688
	2027	0	6 885	14 168	11 878	13 728	8 269	9 308	13 542	2 581	4 387	13 676	12 990	9 286	6 604	0	0	127 303
	2028	0	6 885	7 465	8 415	14 166	10 781	10 386	15 458	3 411	7 763	16 398	8 355	6 135	5 293	0	0	120 911
	2029	0	6 885	5 409	8 114	14 861	12 412	9 850	15 234	2 002	10 976	19 005	8 632	6 135	5 293	0	0	124 808
	2030	0	6 885	5 409	11 606	16 950	11 836	6 492	16 628	5 375	14 388	19 974	8 698	6 135	5 293	0	0	135 670
	2031	0	6 885	5 409	15 298	18 961	12 475	6 492	17 567	11 007	18 680	19 974	9 745	7 303	5 512	0	0	155 307
	2032	0	6 885	5 409	17 137	19 911	12 751	9 251	20 269	16 236	22 657	19 974	11 140	8 860	5 804	0	0	176 283
	2033	0	6 885	5 409	17 137	19 911	12 751	12 930	22 933	17 958	23 956	19 974	12 186	10 028	6 023	0	0	188 080
	2034	0	6 885	5 409	17 137	19 911	12 751	15 689	24 931	17 958	23 956	19 974	12 186	10 028	6 023	0	0	192 837